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Xeon E3 1275 v6 Linux Sep

Intel Xeon E3-1275 v6 testing with a ASUS P10S-M WS (4401 BIOS) and Intel HD P630 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

Xeon

Processor: Intel Xeon E3-1275 v6 @ 4.20GHz (4 Cores / 8 Threads), Motherboard: ASUS P10S-M WS (4401 BIOS), Chipset: Intel Xeon E3-1200 v6/7th, Memory: 16GB, Disk: Samsung SSD 970 EVO Plus 500GB, Graphics: Intel HD P630 3GB (1150MHz), Audio: Realtek ALC1150, Monitor: DELL S2409W, Network: 2 x Intel I210

OS: Ubuntu 20.04, Kernel: 5.4.0-42-generic (x86_64), Desktop: GNOME Shell 3.36.2, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.4, OpenCL: OpenCL 2.1, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix

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--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=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0xd6
Python Notes: Python 3.8.2
Security Notes: itlb_multihit: KVM: Mitigation of Split huge pages + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

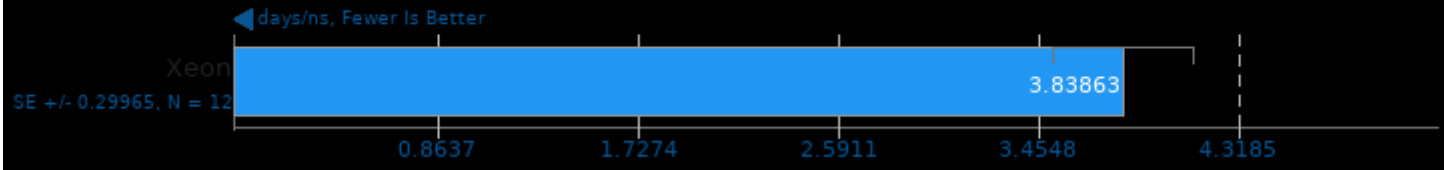
	Xeon
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	3.83863
Standard Deviation	27%
Zstd Compression - 3 (MB/s)	2540
Standard Deviation	0.8%
Zstd Compression - 19 (MB/s)	21.7
Standard Deviation	0%
perf-bench - Epoll Wait (ops/sec)	129784
Standard Deviation	0.2%
perf-bench - Futex Hash (ops/sec)	1463710
Standard Deviation	0.1%
perf-bench - Memcpy 1MB (GB/sec)	33.020043
Standard Deviation	1.6%
perf-bench - Memset 1MB (GB/sec)	51.076033
Standard Deviation	1.2%
perf-bench - Sched Pipe (ops/sec)	238176
Standard Deviation	0.7%
perf-bench - Futex Lock-Pi (ops/sec)	1499
Standard Deviation	0.7%
perf-bench - Syscall Basic (ops/sec)	2874423
Standard Deviation	0.1%
TensorFlow Lite - SqueezeNet (us)	449749
Standard Deviation	0%
TensorFlow Lite - Inception V4 (us)	6483860
Standard Deviation	0%
TensorFlow Lite - NASNet Mobile (us)	330145
Standard Deviation	0%
TensorFlow Lite - Mobilenet Float (us)	305398
Standard Deviation	0%
TensorFlow Lite - Mobilenet Quant (us)	314083
Standard Deviation	0%
TensorFlow Lite - I.R.V (us)	5866713
Standard Deviation	0%
ASTC Encoder - Fast (sec)	8.26
Standard Deviation	0.3%
ASTC Encoder - Medium (sec)	10.05
Standard Deviation	0.1%
ASTC Encoder - Thorough (sec)	65.12
Standard Deviation	0%
ASTC Encoder - Exhaustive (sec)	522.55
Standard Deviation	0.4%
Hugin - P.P.A.S.T (sec)	67.276
Standard Deviation	0.2%

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OCRMyPDF - P.6.P.P.D (sec)	49.790
Standard Deviation	0.5%
ECP-CANDLE - P1B2 (sec)	39.824
ECP-CANDLE - P3B1 (sec)	1092
ECP-CANDLE - P3B2 (sec)	537.008
AI Benchmark Alpha - D.I.S (Score)	735
AI Benchmark Alpha - D.T.S (Score)	809
AI Benchmark Alpha - Device AI Score (Score)	1544
Tesseract OCR - T.T.O.7.I (sec)	24.941
Standard Deviation	0.1%

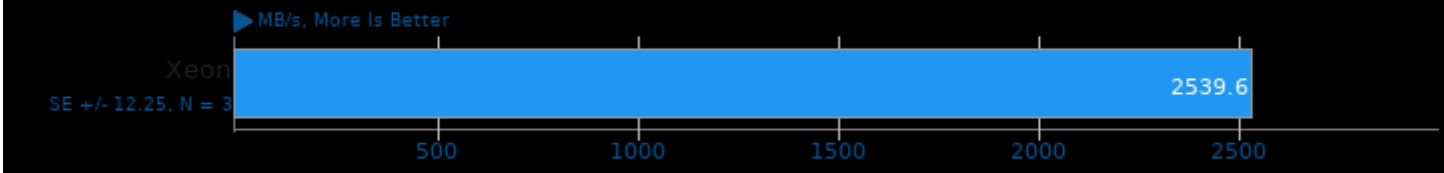
NAMD 2.14

ATPase Simulation - 327,506 Atoms



Zstd Compression 1.4.5

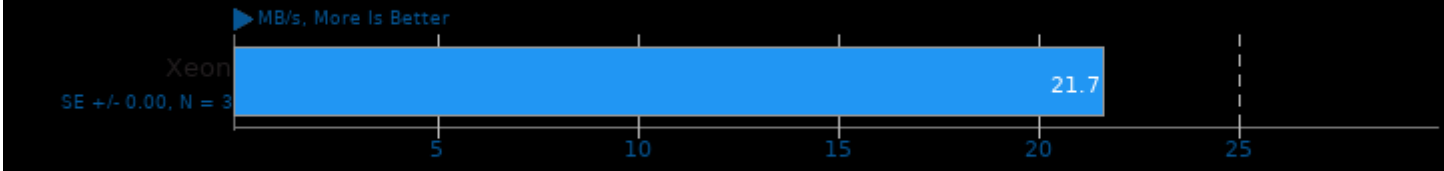
Compression Level: 3



1. (CC) gcc options: -O3 -pthread -lz -llzma

Zstd Compression 1.4.5

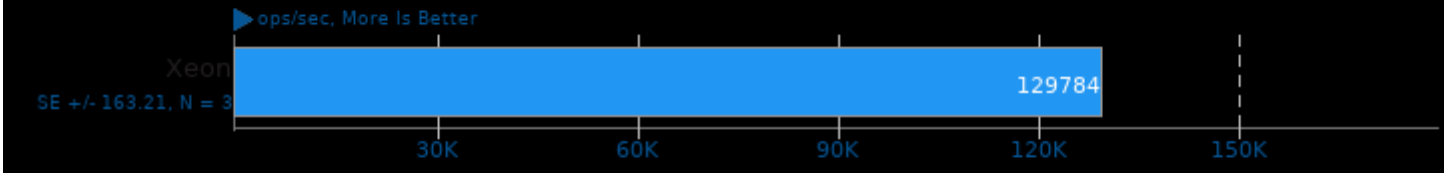
Compression Level: 19



1. (CC) gcc options: -O3 -pthread -lz -llzma

perf-bench

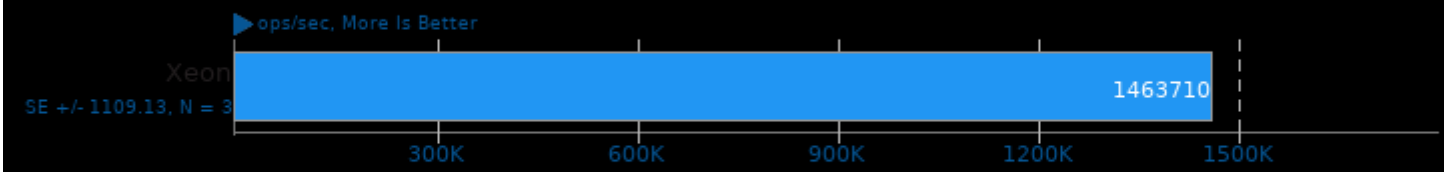
Benchmark: Epoll Wait



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lperl -lc -lcrypt -lbfd -lopcodes -lz -llzma -lnuma

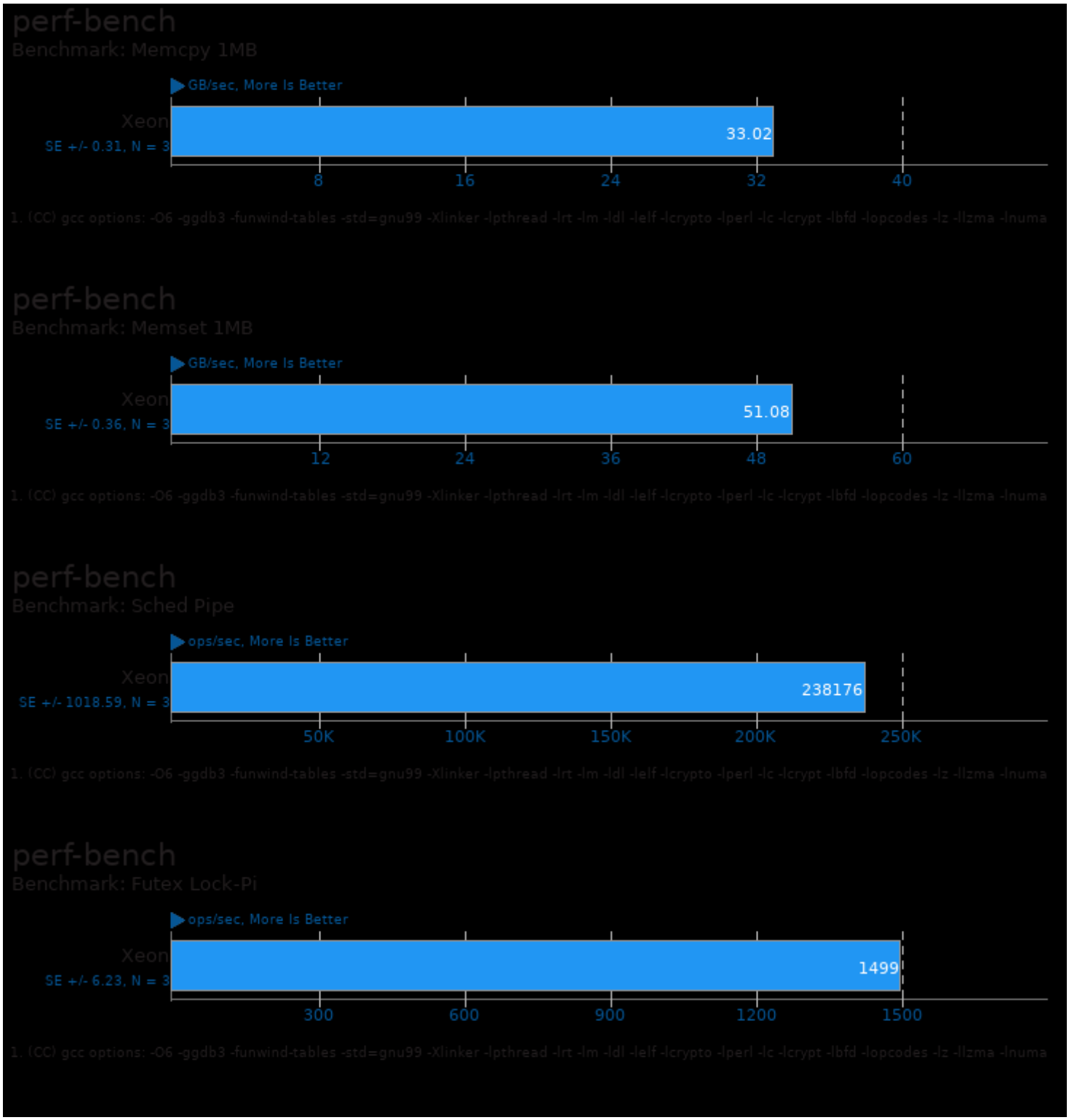
perf-bench

Benchmark: Futex Hash



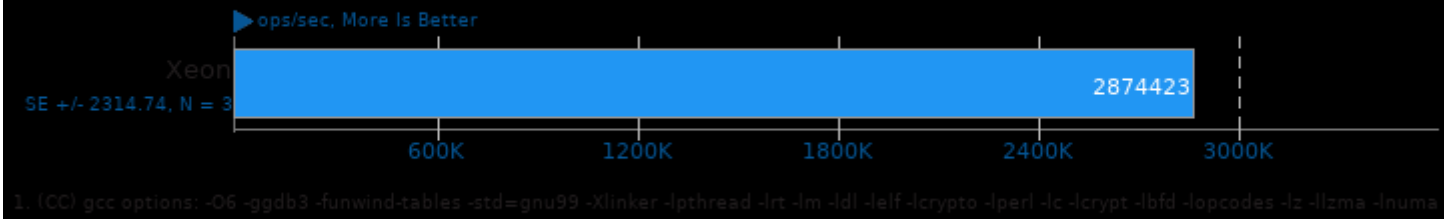
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lperl -lc -lcrypt -lbfd -lopcodes -lz -llzma -lnuma

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perf-bench

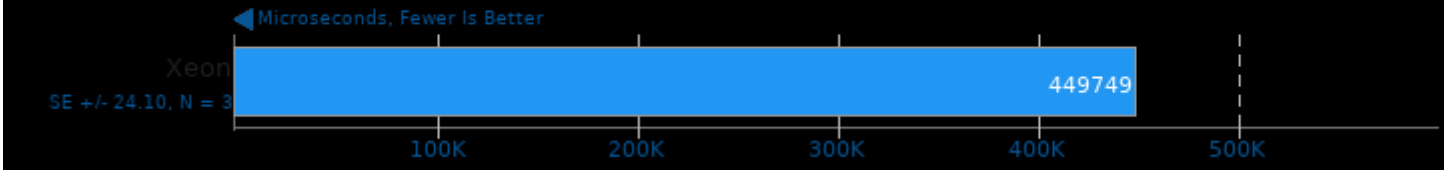
Benchmark: Syscall Basic



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lperl -lc -lcrypt -lbfd -lopcodes -lz -llzma -lnuma

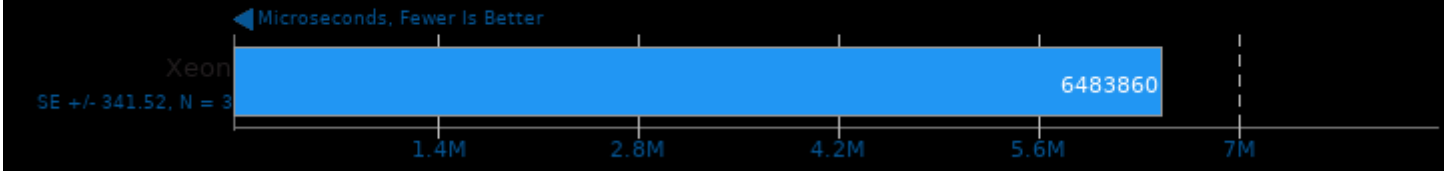
TensorFlow Lite 2020-08-23

Model: SqueezeNet



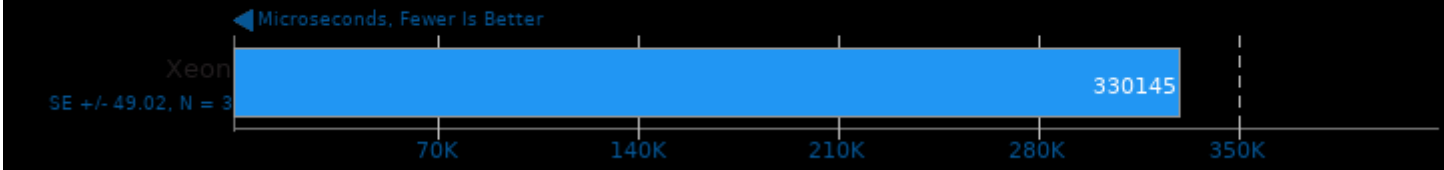
TensorFlow Lite 2020-08-23

Model: Inception V4



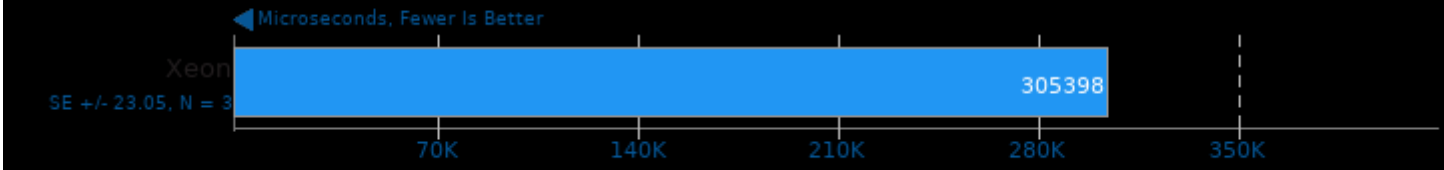
TensorFlow Lite 2020-08-23

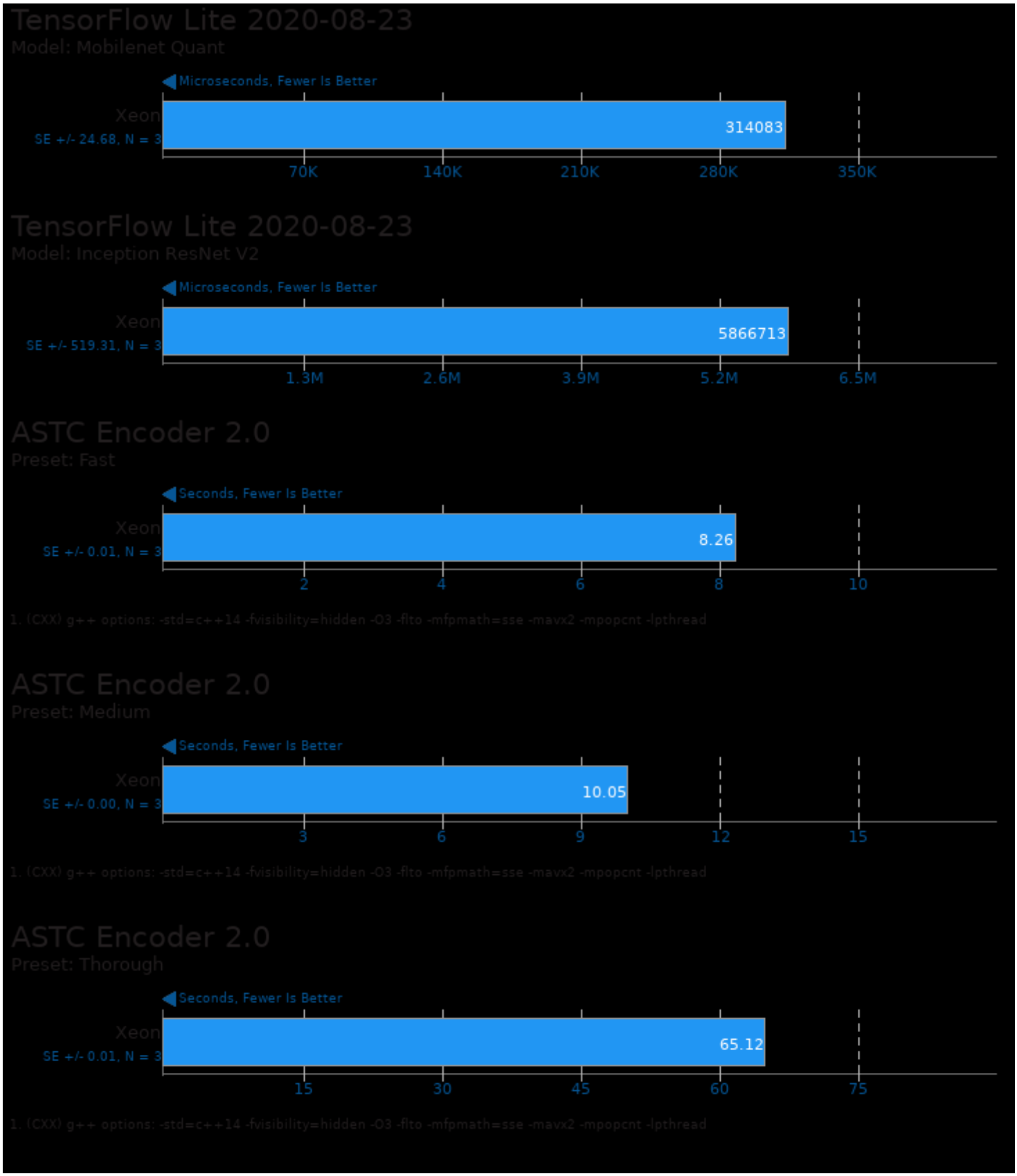
Model: NASNet Mobile



TensorFlow Lite 2020-08-23

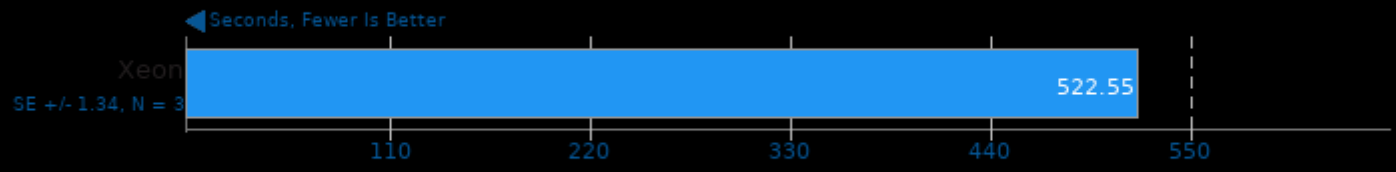
Model: Mobilenet Float




TensorFlow Lite 2020-08-23
Model: Mobilenet Quant
Microseconds, Fewer Is Better
Xeon
SE +/- 24.68, N = 3
314083
70K
140K
210K
280K
350K
TensorFlow Lite 2020-08-23
Model: Inception ResNet V2
Microseconds, Fewer Is Better
Xeon
SE +/- 519.31, N = 3
5866713
1.3M
2.6M
3.9M
5.2M
6.5M
ASTC Encoder 2.0
Preset: Fast
Seconds, Fewer Is Better
Xeon
SE +/- 0.01, N = 3
8.26
2
4
6
8
10
1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread
ASTC Encoder 2.0
Preset: Medium
Seconds, Fewer Is Better
Xeon
SE +/- 0.00, N = 3
10.05
3
6
9
12
15
1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread
ASTC Encoder 2.0
Preset: Thorough
Seconds, Fewer Is Better
Xeon
SE +/- 0.01, N = 3
65.12
15
30
45
60
75
1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread

ASTC Encoder 2.0

Preset: Exhaustive



1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread

Hugin

Panorama Photo Assistant + Stitching Time



OCRMyPDF 9.6.0+dfsg

Processing 60 Page PDF Document



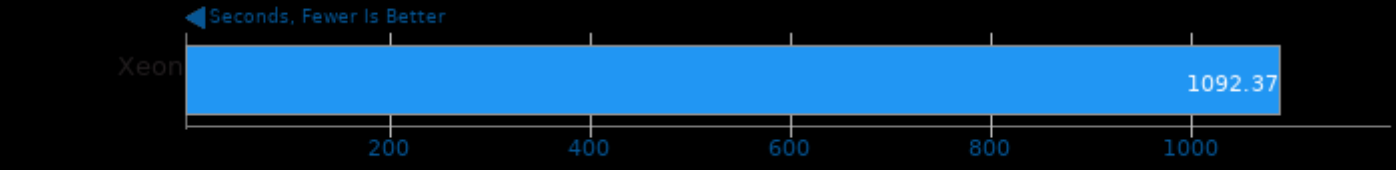
ECP-CANDLE 0.3

Benchmark: P1B2



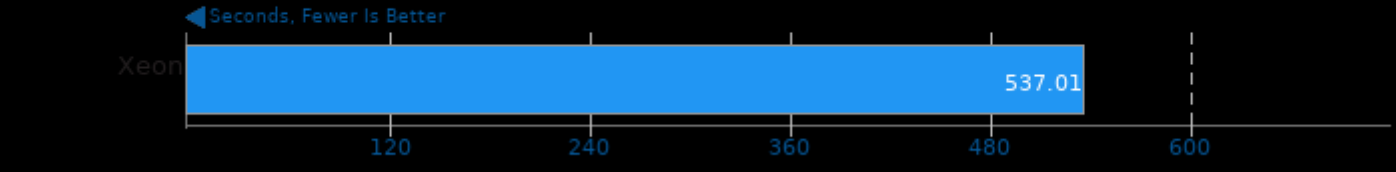
ECP-CANDLE 0.3

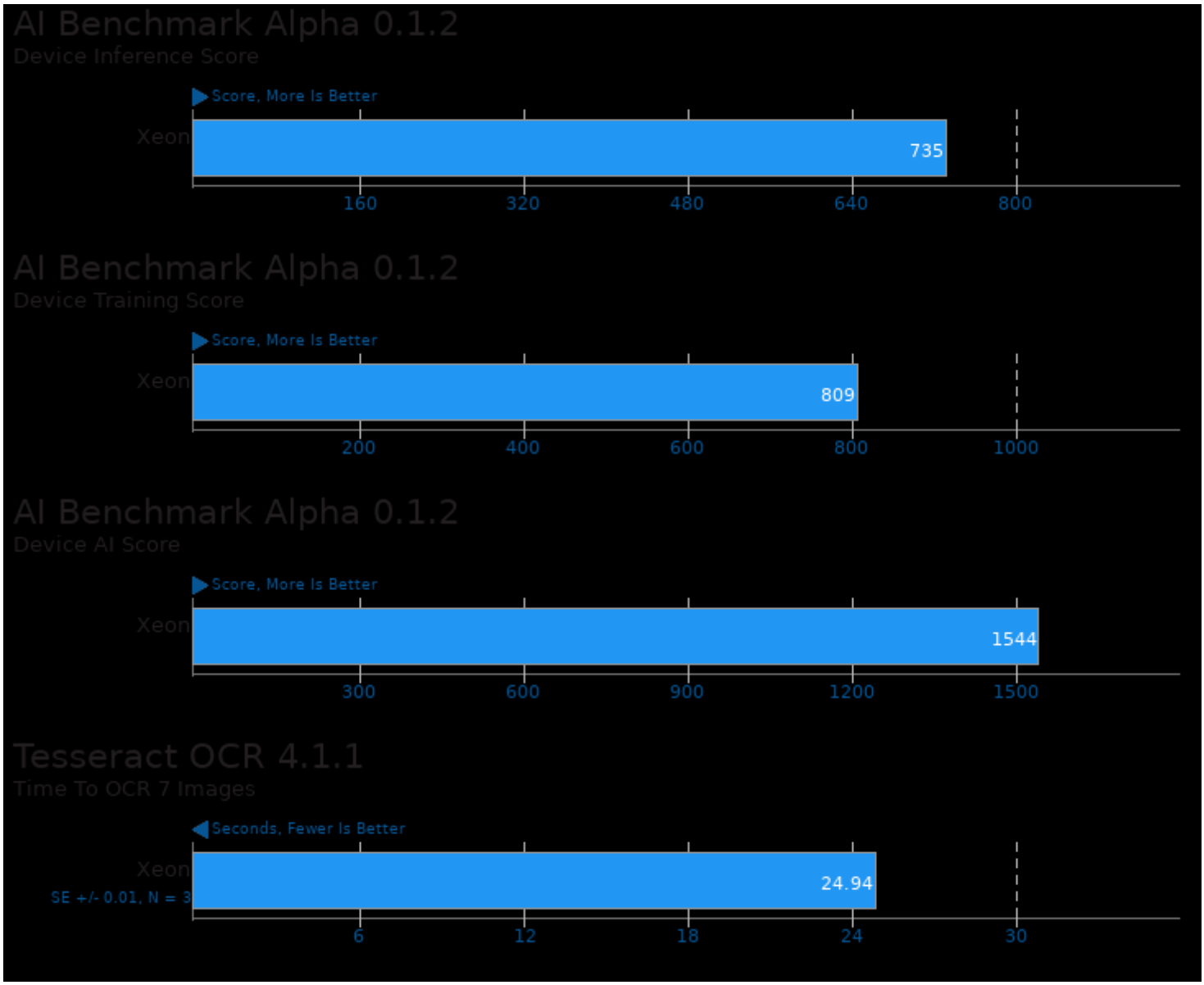
Benchmark: P3B1



ECP-CANDLE 0.3

Benchmark: P3B2





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