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2 x Intel Xeon Gold 5220R testing with a TYAN S7106 (V2.01.B40 BIOS) and llvmpipe on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

r1

Processor: 2 x Intel Xeon Gold 5220R @ 3.90GHz (36 Cores / 72 Threads), Motherboard: TYAN S7106 (V2.01.B40 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 94GB, Disk: 500GB Samsung SSD 860, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Intel I210 + 2 x QLogic cLOM8214 1/10GbE

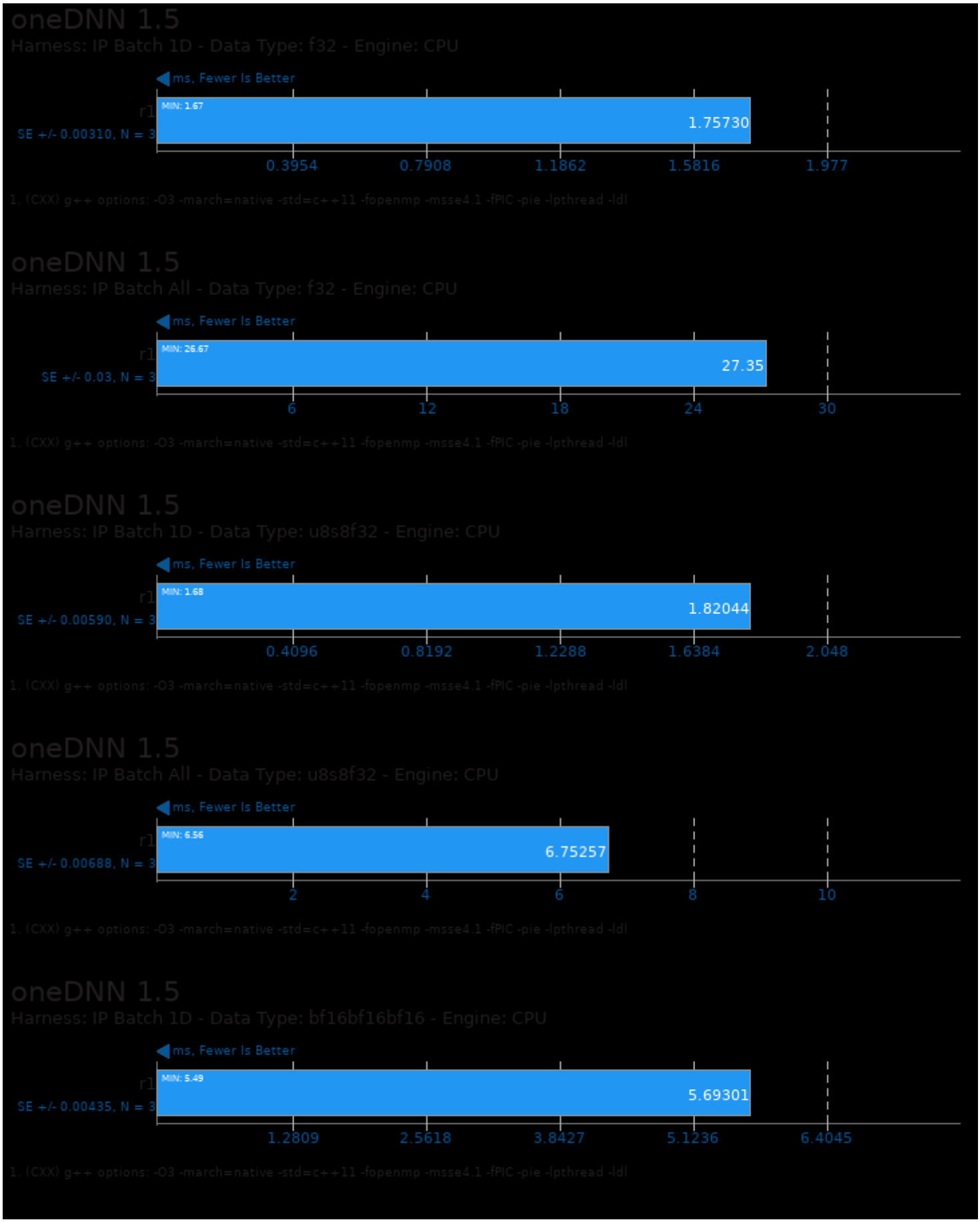
OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc6-generic (x86_64) 20200920, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 3.3 Mesa 20.0.4 (LLVM 9.0.1 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

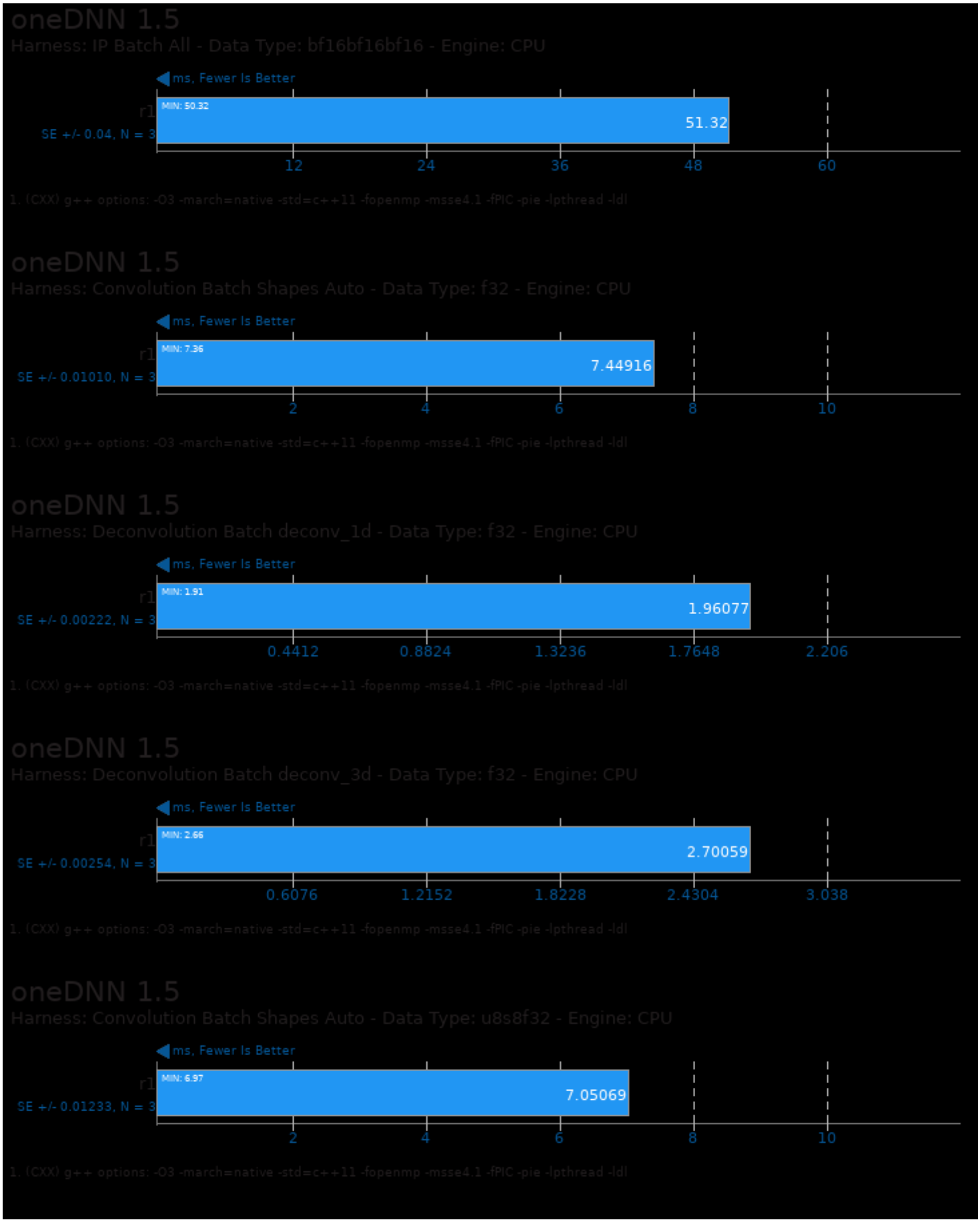
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix

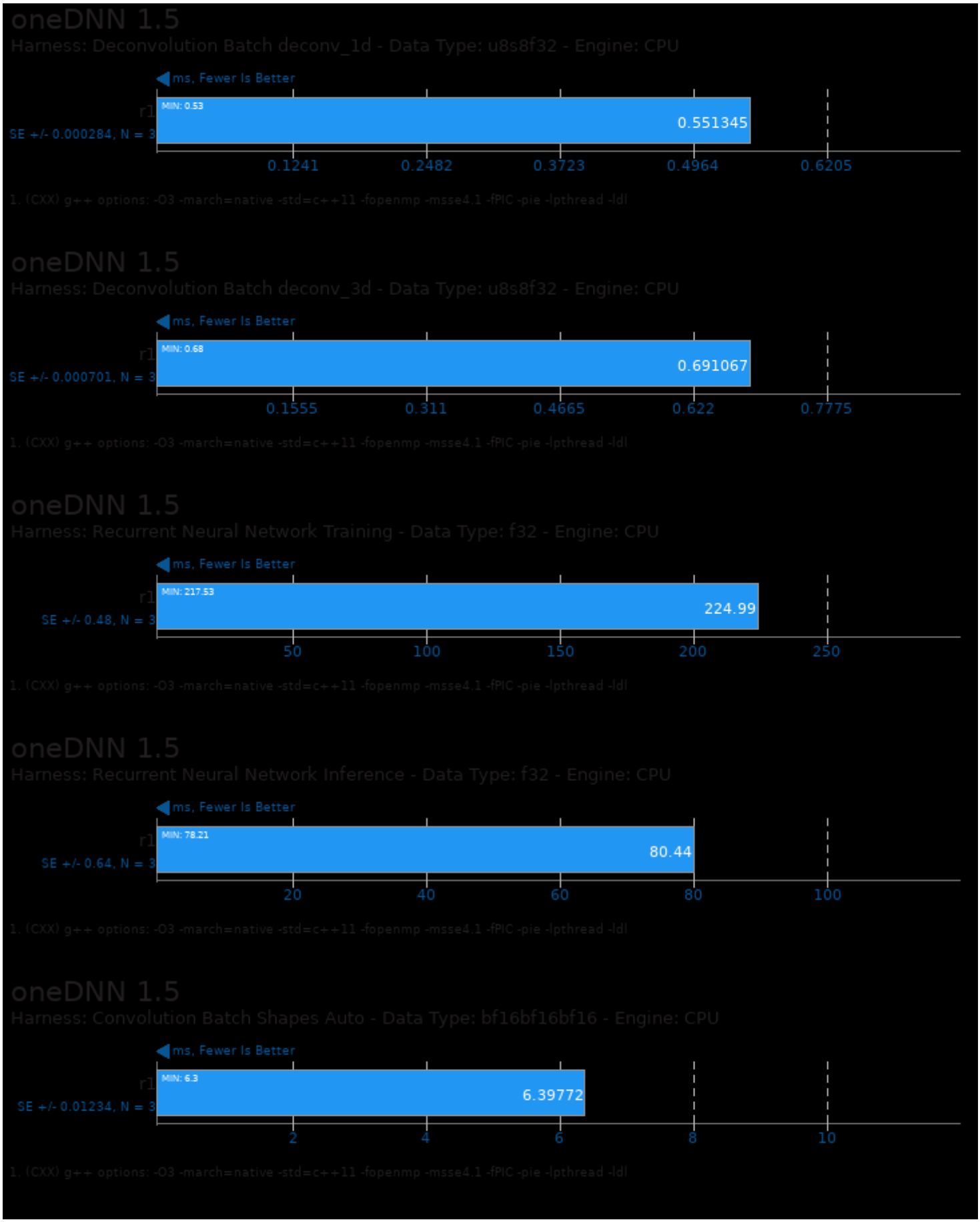
--host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x5002f01
Python Notes: Python 3.8.2
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Not affected + mds: Not affected + meltdown: Not affected + 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 Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Mitigation of TSX disabled

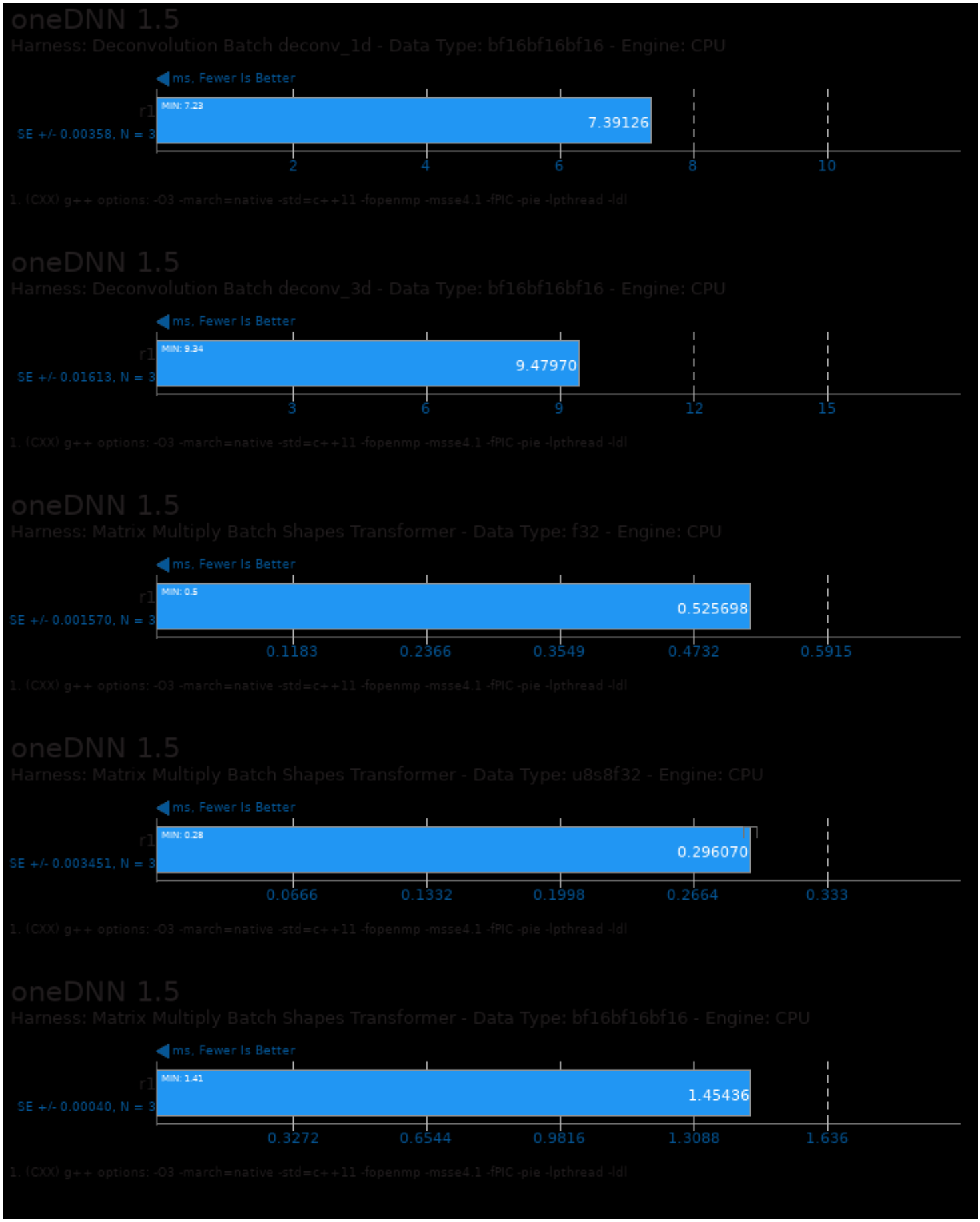
	r1
oneDNN - IP Batch 1D - f32 - CPU (ms)	1.75730
Standard Deviation	0.3%
oneDNN - IP Batch All - f32 - CPU (ms)	27.3493
Standard Deviation	0.2%
oneDNN - IP Batch 1D - u8s8f32 - CPU (ms)	1.82044
Standard Deviation	0.6%
oneDNN - IP Batch All - u8s8f32 - CPU (ms)	6.75257
Standard Deviation	0.2%
oneDNN - IP Batch 1D - bf16bf16bf16 - CPU (ms)	5.69301
Standard Deviation	0.1%
oneDNN - IP Batch All - bf16bf16bf16 - CPU (ms)	51.3189
Standard Deviation	0.1%
oneDNN - C.B.S.A - f32 - CPU (ms)	7.44916
Standard Deviation	0.2%
oneDNN - D.B.d - f32 - CPU (ms)	1.96077
Standard Deviation	0.2%
oneDNN - D.B.d - f32 - CPU (ms)	2.70059
Standard Deviation	0.2%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	7.05069
Standard Deviation	0.3%
oneDNN - D.B.d - u8s8f32 - CPU (ms)	0.551345
Standard Deviation	0.1%
oneDNN - D.B.d - u8s8f32 - CPU (ms)	0.691067
Standard Deviation	0.2%
oneDNN - R.N.N.T - f32 - CPU (ms)	224.994
Standard Deviation	0.4%
oneDNN - R.N.N.I - f32 - CPU (ms)	80.4353
Standard Deviation	1.4%
oneDNN - C.B.S.A - bf16bf16bf16 - CPU (ms)	6.39772
Standard Deviation	0.3%
oneDNN - D.B.d - bf16bf16bf16 - CPU (ms)	7.39126
Standard Deviation	0.1%
oneDNN - D.B.d - bf16bf16bf16 - CPU (ms)	9.47970
Standard Deviation	0.3%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	0.525698
Standard Deviation	0.5%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	0.296070
Standard Deviation	2%
oneDNN - M.M.B.S.T - bf16bf16bf16 - CPU (ms)	1.45436
Standard Deviation	0%
AOM AV1 - Speed 0 Two-Pass (FPS)	0.27
Standard Deviation	0%

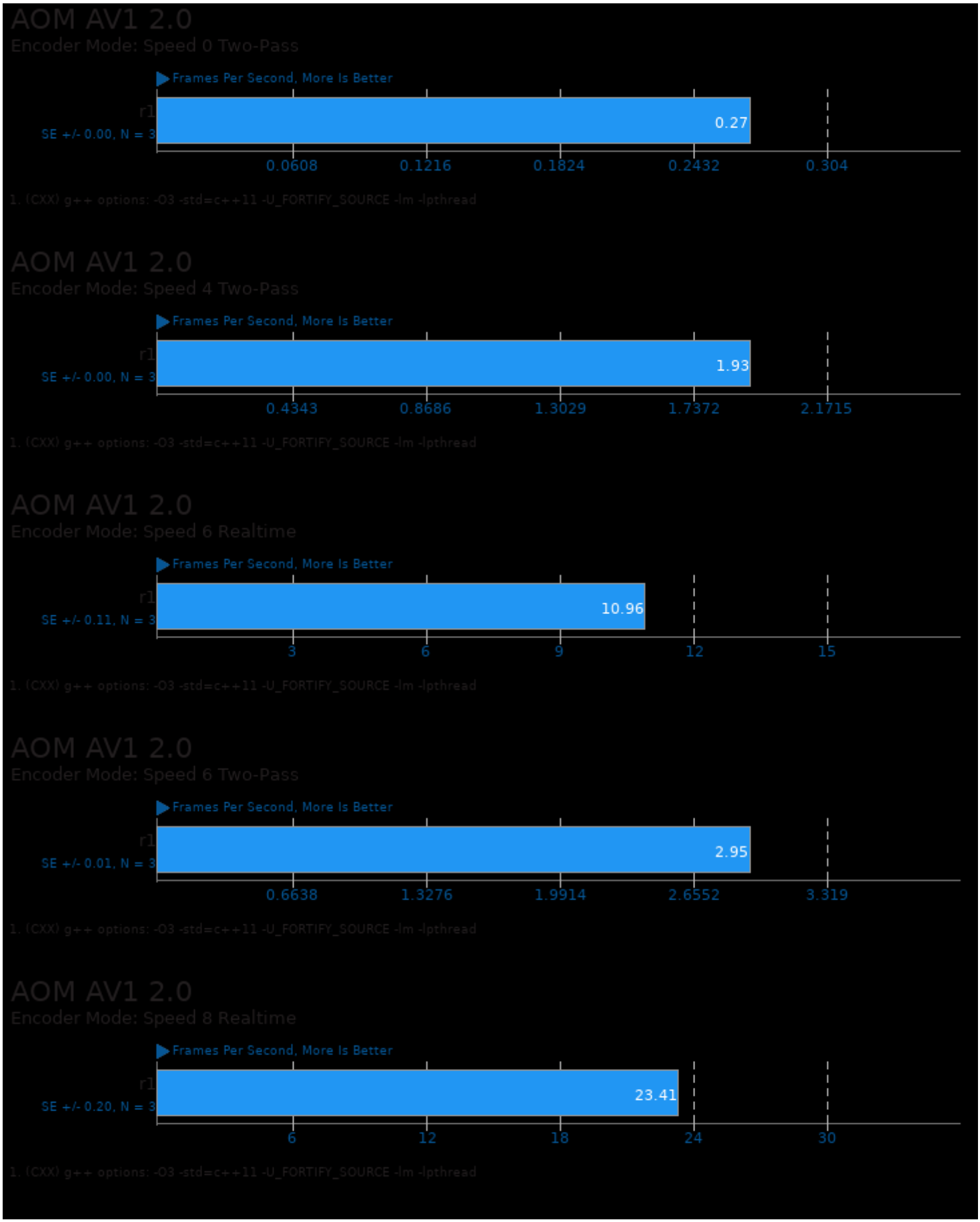
AOM AV1 - Speed 4 Two-Pass (FPS)	1.93
Standard Deviation	0.3%
AOM AV1 - Speed 6 Realtime (FPS)	10.96
Standard Deviation	1.8%
AOM AV1 - Speed 6 Two-Pass (FPS)	2.95
Standard Deviation	0.4%
AOM AV1 - Speed 8 Realtime (FPS)	23.41
Standard Deviation	1.5%
Timed Linux Kernel Compilation - Time To Compile (sec)	38.431
Standard Deviation	3%
Timed LLVM Compilation - Time To Compile (sec)	285.574
Standard Deviation	2.4%
Blender - BMW27 - CPU-Only (sec)	60.49
Standard Deviation	0.1%
Blender - Classroom - CPU-Only (sec)	173.91
Standard Deviation	0.7%
Blender - Fishy Cat - CPU-Only (sec)	84.22
Standard Deviation	0.8%
Blender - Barbershop - CPU-Only (sec)	249.29
Standard Deviation	0.6%
Blender - Pabellon Barcelona - CPU-Only (sec)	193.19
Standard Deviation	0.1%
Kripke (Throughput FoM)	46087163
Standard Deviation	7.6%
OpenCV - DNN - D.N.N (ms)	10566
Standard Deviation	0.4%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000 (val/sec)	726686
Standard Deviation	5.5%
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	1296920
Standard Deviation	0.3%
InfluxDB - 1024 - 10000 - 2,5000,1 - 10000 (val/sec)	1363128
Standard Deviation	0.3%


oneDNN 1.5
Harness: IP Batch 1D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 1.67
1.75730
SE +/- 0.00310, N = 3
0.3954
0.7908
1.1862
1.5816
1.977
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: IP Batch All - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 26.67
27.35
SE +/- 0.03, N = 3
6
12
18
24
30
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: IP Batch 1D - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 1.68
1.82044
SE +/- 0.00590, N = 3
0.4096
0.8192
1.2288
1.6384
2.048
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: IP Batch All - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 6.56
6.75257
SE +/- 0.00688, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: IP Batch 1D - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 5.49
5.69301
SE +/- 0.00435, N = 3
1.2809
2.5618
3.8427
5.1236
6.4045
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl


oneDNN 1.5
Harness: IP Batch All - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 50.32
51.32
SE +/- 0.04, N = 3
12
24
36
48
60
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 7.36
7.44916
SE +/- 0.01010, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Deconvolution Batch deconv_1d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 1.91
1.96077
SE +/- 0.00222, N = 3
0.4412
0.8824
1.3236
1.7648
2.206
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Deconvolution Batch deconv_3d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 2.66
2.70059
SE +/- 0.00254, N = 3
0.6076
1.2152
1.8228
2.4304
3.038
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 6.97
7.05069
SE +/- 0.01233, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl


oneDNN 1.5
Harness: Deconvolution Batch deconv_1d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 0.53
0.551345
SE +/- 0.000284, N = 3
0.1241
0.2482
0.3723
0.4964
0.6205
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Deconvolution Batch deconv_3d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 0.68
0.691067
SE +/- 0.000701, N = 3
0.1555
0.311
0.4665
0.622
0.7775
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 217.53
224.99
SE +/- 0.48, N = 3
50
100
150
200
250
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 78.21
80.44
SE +/- 0.64, N = 3
20
40
60
80
100
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Convolution Batch Shapes Auto - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 6.3
6.39772
SE +/- 0.01234, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl


oneDNN 1.5
Harness: Deconvolution Batch deconv_1d - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 7.23
7.39126
SE +/- 0.00358, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Deconvolution Batch deconv_3d - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 9.34
9.47970
SE +/- 0.01613, N = 3
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 0.5
0.525698
SE +/- 0.001570, N = 3
0.1183
0.2366
0.3549
0.4732
0.5915
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 0.28
0.296070
SE +/- 0.003451, N = 3
0.0666
0.1332
0.1998
0.2664
0.333
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 1.5
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
r1
MIN: 1.41
1.45436
SE +/- 0.00040, N = 3
0.3272
0.6544
0.9816
1.3088
1.636
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl


AOM AV1 2.0
Encoder Mode: Speed 0 Two-Pass
Frames Per Second, More Is Better
r1
SE +/- 0.00, N = 3
0.27
0.0608
0.1216
0.1824
0.2432
0.304
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 2.0
Encoder Mode: Speed 4 Two-Pass
Frames Per Second, More Is Better
r1
SE +/- 0.00, N = 3
1.93
0.4343
0.8686
1.3029
1.7372
2.1715
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 2.0
Encoder Mode: Speed 6 Realtime
Frames Per Second, More Is Better
r1
SE +/- 0.11, N = 3
10.96
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 2.0
Encoder Mode: Speed 6 Two-Pass
Frames Per Second, More Is Better
r1
SE +/- 0.01, N = 3
2.95
0.6638
1.3276
1.9914
2.6552
3.319
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 2.0
Encoder Mode: Speed 8 Realtime
Frames Per Second, More Is Better
r1
SE +/- 0.20, N = 3
23.41
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

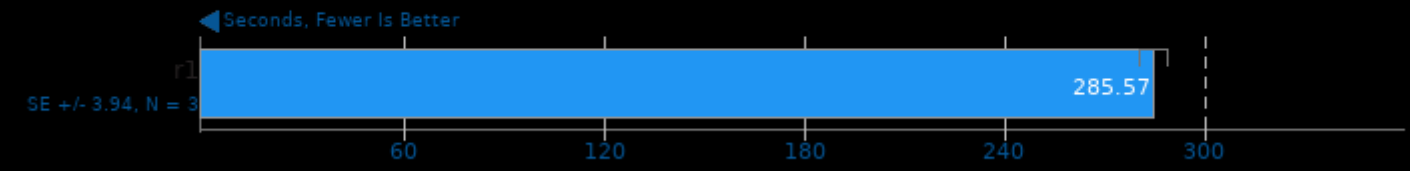
Timed Linux Kernel Compilation 5.4

Time To Compile



Timed LLVM Compilation 10.0

Time To Compile



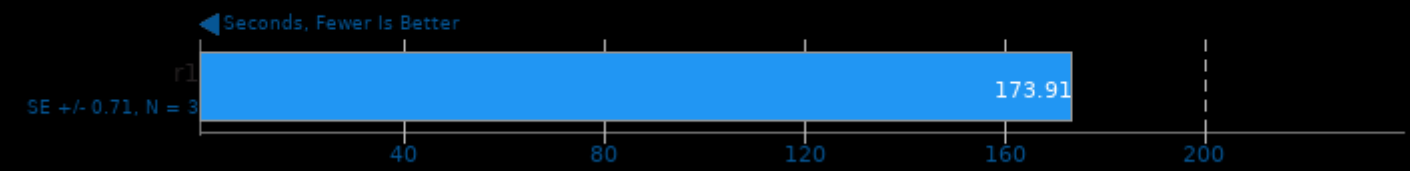
Blender 2.90

Blend File: BMW27 - Compute: CPU-Only



Blender 2.90

Blend File: Classroom - Compute: CPU-Only



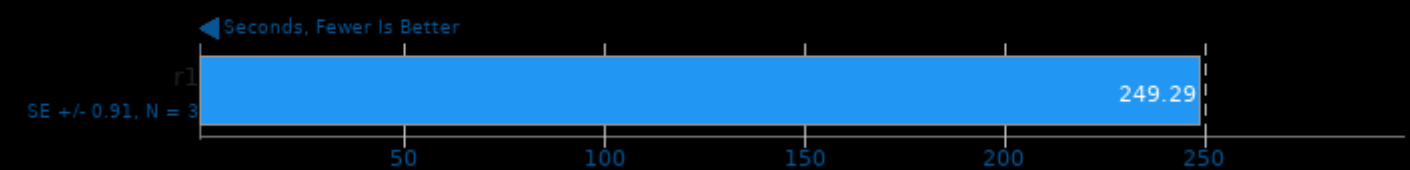
Blender 2.90

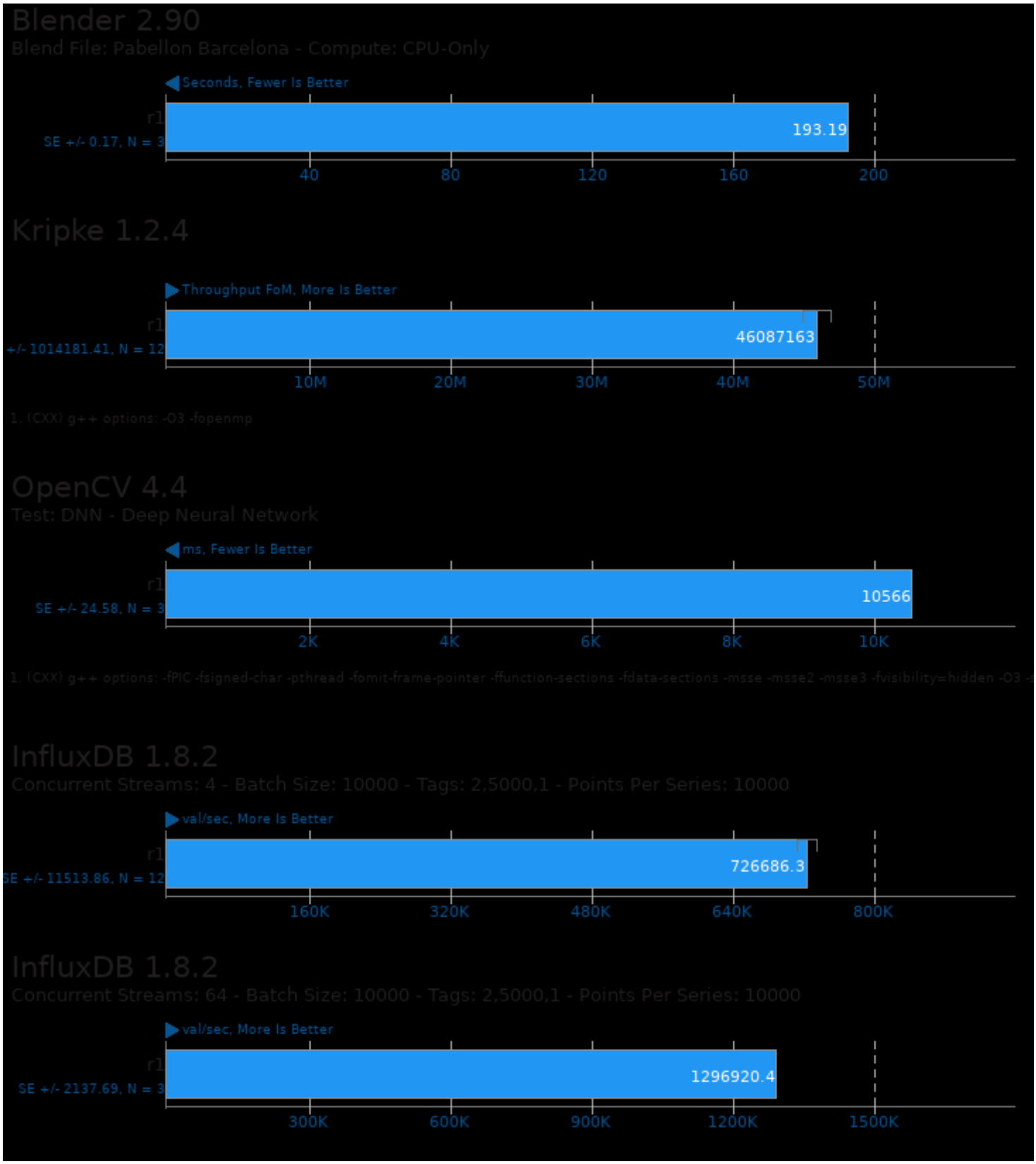
Blend File: Fishy Cat - Compute: CPU-Only

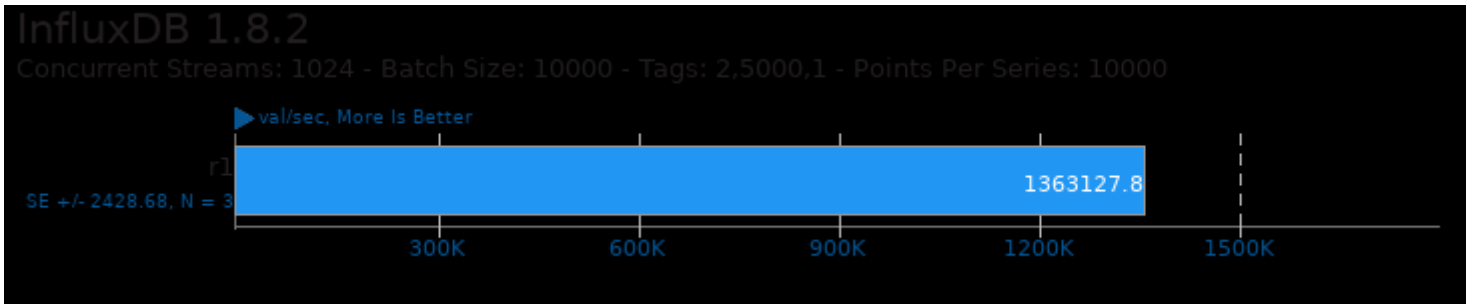


Blender 2.90

Blend File: Barbershop - Compute: CPU-Only




Blender 2.90
Blend File: Pabellon Barcelona - Compute: CPU-Only
Seconds, Fewer Is Better
r1
193.19
SE +/- 0.17, N = 3
40
80
120
160
200
Kripke 1.2.4
Throughput FoM, More Is Better
r1
46087163
+/- 1014181.41, N = 12
10M
20M
30M
40M
50M
1. (CXX) g++ options: -O3 -fopenmp
OpenCV 4.4
Test: DNN - Deep Neural Network
ms, Fewer Is Better
r1
10566
SE +/- 24.58, N = 3
2K
4K
6K
8K
10K
1. (CXX) g++ options: -fPIC -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3
InfluxDB 1.8.2
Concurrent Streams: 4 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000
val/sec, More Is Better
r1
726686.3
SE +/- 11513.86, N = 12
160K
320K
480K
640K
800K
InfluxDB 1.8.2
Concurrent Streams: 64 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000
val/sec, More Is Better
r1
1296920.4
SE +/- 2137.69, N = 3
300K
600K
900K
1200K
1500K



This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 11:27.