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dnn

Intel Core i7-1065G7 testing with a Dell 06CDVY (1.0.9 BIOS) and Intel Iris Plus ICL GT2 16GB on Ubuntu 22.04 via the Phoronix Test Suite.

Automated Executive Summary

a had the most wins, coming in first place for 52% of the tests.

Based on the geometric mean of all complete results, the fastest (B) was 1.064x the speed of the slowest (C). a was 0.989x the speed of B and C was 0.951x the speed of a.

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

oneDNN (Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU) at 3.608x
oneDNN (Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU) at 1.57x
oneDNN (Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU) at 1.527x
AOM AV1 (Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K) at 1.4x
oneDNN (Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU) at 1.379x
oneDNN (Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU) at 1.372x
oneDNN (Harness: Deconvolution Batch shapes_1d - Data Type: bf16bf16bf16 - Engine: CPU) at 1.354x
oneDNN (Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU) at 1.337x
oneDNN (Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU) at 1.284x

oneDNN (Harness: IP Shapes 3D - Data Type: bf16bf16bf16 - Engine: CPU) at 1.226x.

Test Systems:

a

B

C

Processor: Intel Core i7-1065G7 @ 3.90GHz (4 Cores / 8 Threads), Motherboard: Dell 06CDVY (1.0.9 BIOS), Chipset: Intel Ice Lake-LP DRAM, Memory: 16GB, Disk: Toshiba KBG40ZPZ512G NVMe 512GB, Graphics: Intel Iris Plus ICL GT2 16GB (1100MHz), Audio: Realtek ALC289, Network: Intel Ice Lake-LP PCH CNVi WiFi

OS: Ubuntu 22.04, Kernel: 5.18.8-051808-generic (x86_64), Desktop: GNOME Shell 42.2, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.0.1, Vulkan: 1.3.204, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1200

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-gBFGDP/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-gBFGDP/gcc-11-11.2.0/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: intel_pstate powersave (EPP: balance_performance) - CPU Microcode: 0xb2 - Thermald 2.4.9
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Mitigation of Clear buffers; SMT vulnerable + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

	a	B	C
oneDNN - IP Shapes 1D - f32 - CPU (ms)	**35.0034**	**9.70206**	11.2312
Normalized	27.72%	100%	86.38%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	**3.0983**	4.69934	**4.86282**
Normalized	100%	65.93%	63.71%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**2.5586**	2.70912	**3.90759**
Normalized	100%	94.44%	65.48%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	**0.05**	**0.07**	0.06
Normalized	71.43%	100%	85.71%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)	**2.04681**	2.6405	**2.82193**
Normalized	100%	77.52%	72.53%
oneDNN - D.B.s - f32 - CPU (ms)	**16.4301**	18.7772	**22.5477**
Normalized	100%	87.5%	72.87%
oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	**67.2372**	88.5257	**91.0348**

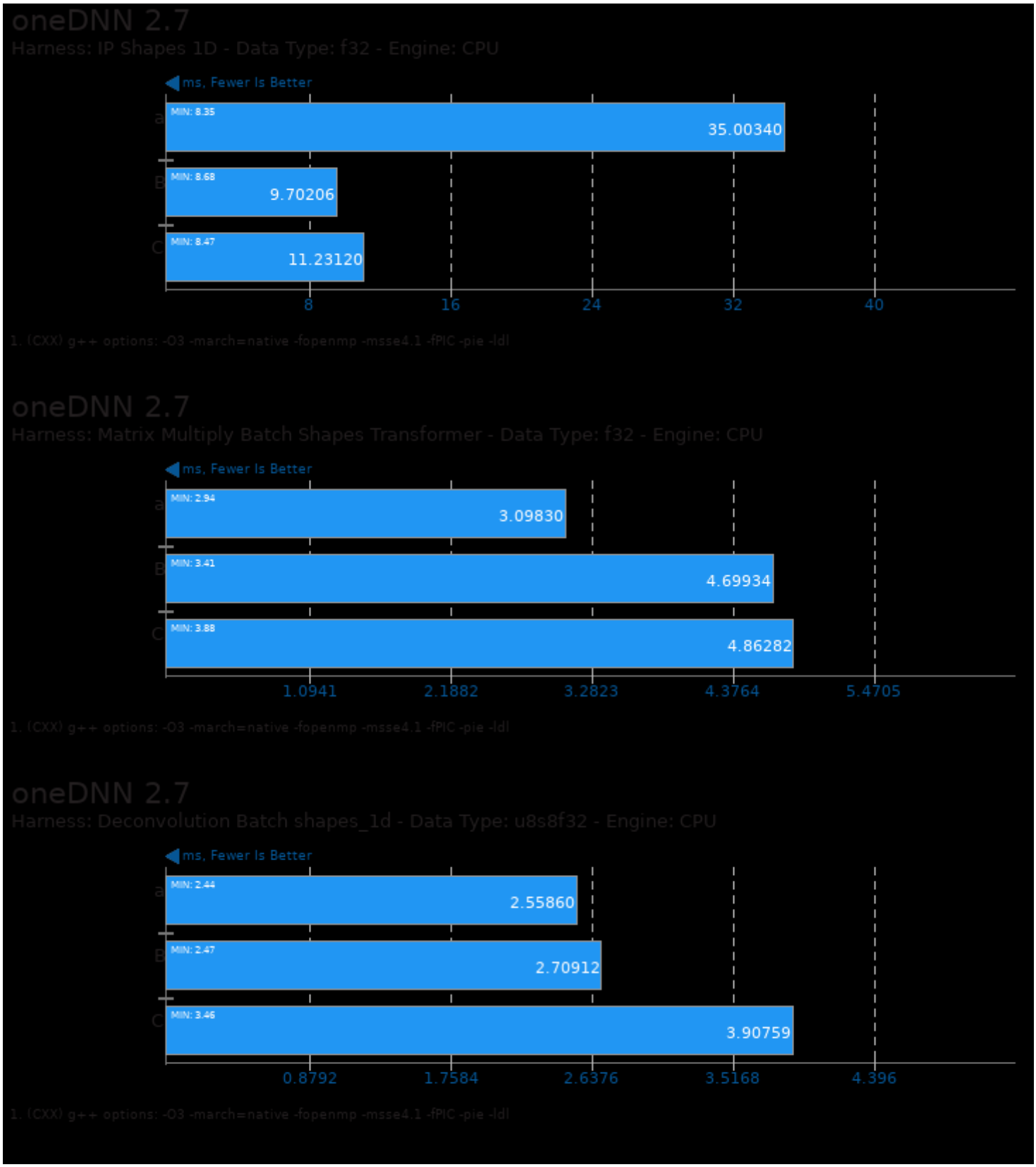
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Normalized	100%	75.95%	73.86%
oneDNN - R.N.N.T - f32 - CPU (ms)	8712	11576	11646
Normalized	100%	75.26%	74.81%
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	2.53521	2.56851	3.25521
Normalized	100%	98.7%	77.88%
oneDNN - IP Shapes 3D - bf16bf16bf16 - CPU (ms)	7.18193	7.26438	8.80495
Normalized	100%	98.87%	81.57%
oneDNN - C.B.S.A - bf16bf16bf16 - CPU (ms)	46.2928	46.3443	55.9285
Normalized	100%	99.89%	82.77%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)	10530	11554	12420
Normalized	100%	91.14%	84.79%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	1.63	1.85	1.72
Normalized	88.11%	100%	92.97%
oneDNN - C.B.S.A - f32 - CPU (ms)	12.804	13.2718	14.5073
Normalized	100%	96.48%	88.26%
oneDNN - M.M.B.S.T - bf16bf16bf16 - CPU (ms)	13.4512	14.7389	15.0843
Normalized	100%	91.26%	89.17%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	9.64	10.72	10
Normalized	89.93%	100%	93.28%
oneDNN - R.N.N.I - f32 - CPU (ms)	5531	5891	6146
Normalized	100%	93.89%	89.99%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	1.78597	1.94628	1.96951
Normalized	100%	91.76%	90.68%
oneDNN - D.B.s - f32 - CPU (ms)	13.0263	12.836	11.8248
Normalized	90.78%	92.12%	100%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	5690	5934	6266
Normalized	100%	95.89%	90.81%
oneDNN - IP Shapes 1D - bf16bf16bf16 - CPU (ms)	23.0975	24.0566	25.3793
Normalized	100%	96.01%	91.01%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	3.1	3.36	3.15
Normalized	92.26%	100%	93.75%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	76.81	82.7	82.41
Normalized	92.88%	100%	99.65%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	0.15	0.16	0.15
Normalized	93.75%	100%	93.75%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	4.51	4.79	4.55
Normalized	94.15%	100%	94.99%
oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	47.594	47.4315	45.0487
Normalized	94.65%	94.98%	100%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	11316	11562	11871
Normalized	100%	97.87%	95.32%

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AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	23.75	**24.74**	**23.61**
Normalized	96%	100%	95.43%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	**6.41178**	6.52629	**6.6617**
Normalized	100%	98.25%	96.25%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**31.82**	**32.98**	32.14
Normalized	96.48%	100%	97.45%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	18.99	**19.51**	**18.87**
Normalized	97.33%	100%	96.72%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	**10.4**	**10.71**	10.54
Normalized	97.11%	100%	98.41%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**3.09829**	**3.00917**	3.04817
Normalized	97.12%	100%	98.72%
AOM AV1 - Speed 10 Realtime - Bosphorus 4K (FPS)	**33.71**	**34.62**	34.11
Normalized	97.37%	100%	98.53%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	**121.8**	**124**	123.75
Normalized	98.23%	100%	99.8%
AOM AV1 - Speed 10 Realtime - Bosphorus 1080p (FPS)	**128.57**	130.07	**130.47**
Normalized	98.54%	99.69%	100%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	**5842**	5885	**5925**
Normalized	100%	99.26%	98.6%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	**11.2055**	11.2428	**11.3214**
Normalized	100%	99.67%	98.98%
Y-Cruncher - 1B (sec)	138.928		

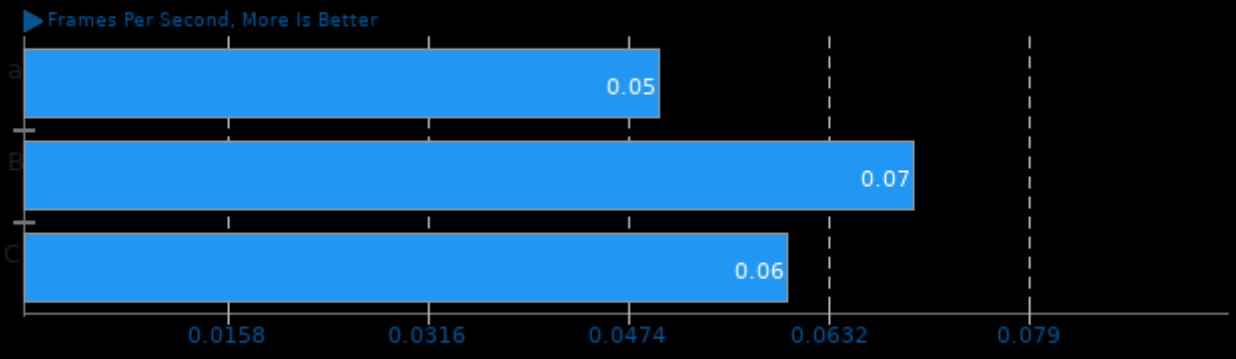
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oneDNN 2.7
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
MIN: 8.35
35.00340
MIN: 8.68
9.70206
MIN: 8.47
11.23120
8
16
24
32
40
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
MIN: 2.94
3.09830
MIN: 3.41
4.69934
MIN: 3.88
4.86282
1.0941
2.1882
3.2823
4.3764
5.4705
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
MIN: 2.44
2.55860
MIN: 2.47
2.70912
MIN: 3.46
3.90759
0.8792
1.7584
2.6376
3.5168
4.396
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

dnn

AOM AV1 3.5

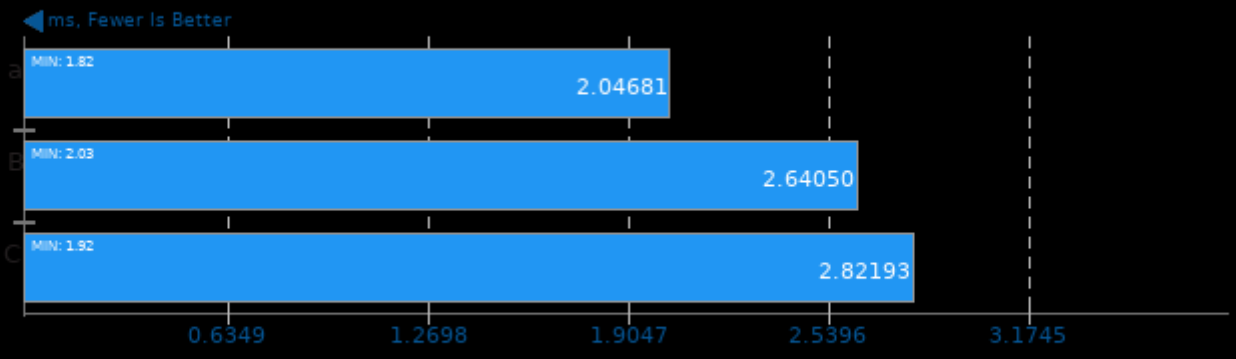
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

oneDNN 2.7

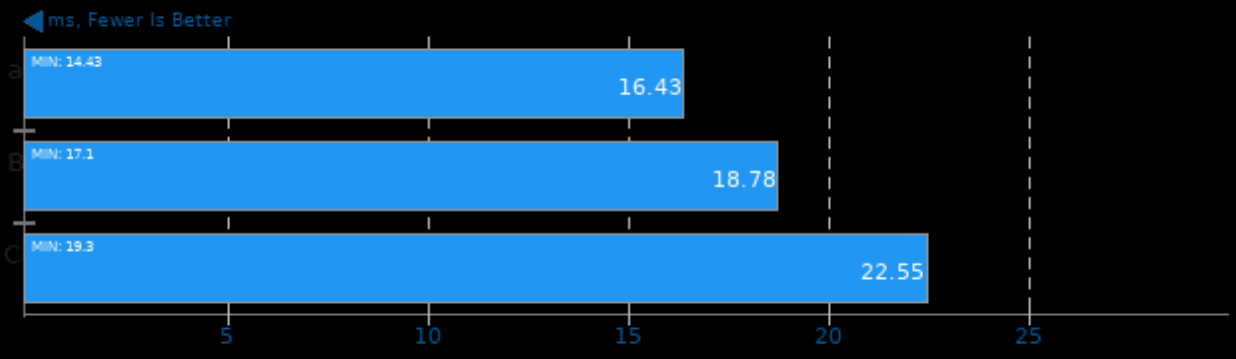
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

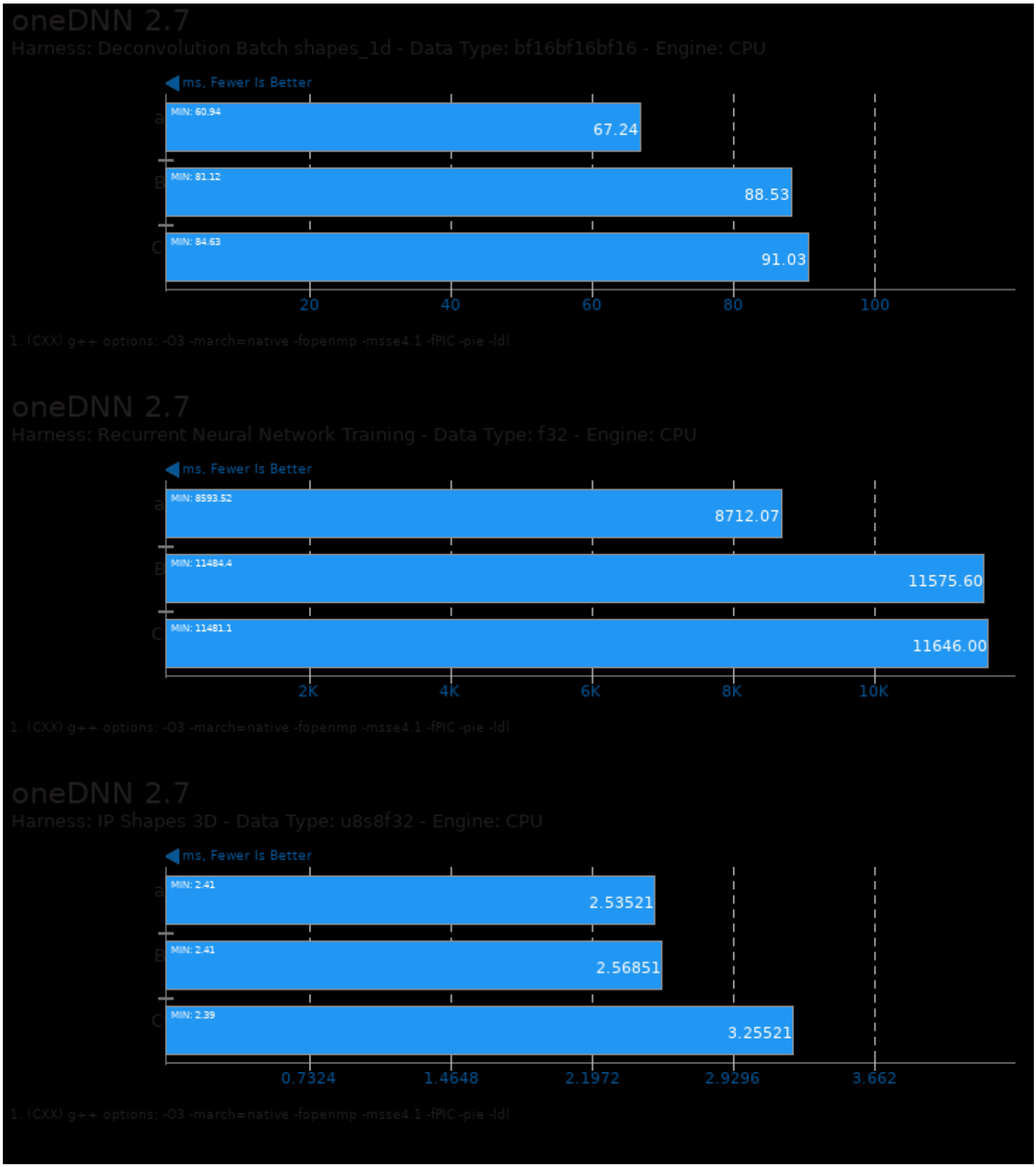
oneDNN 2.7

Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU

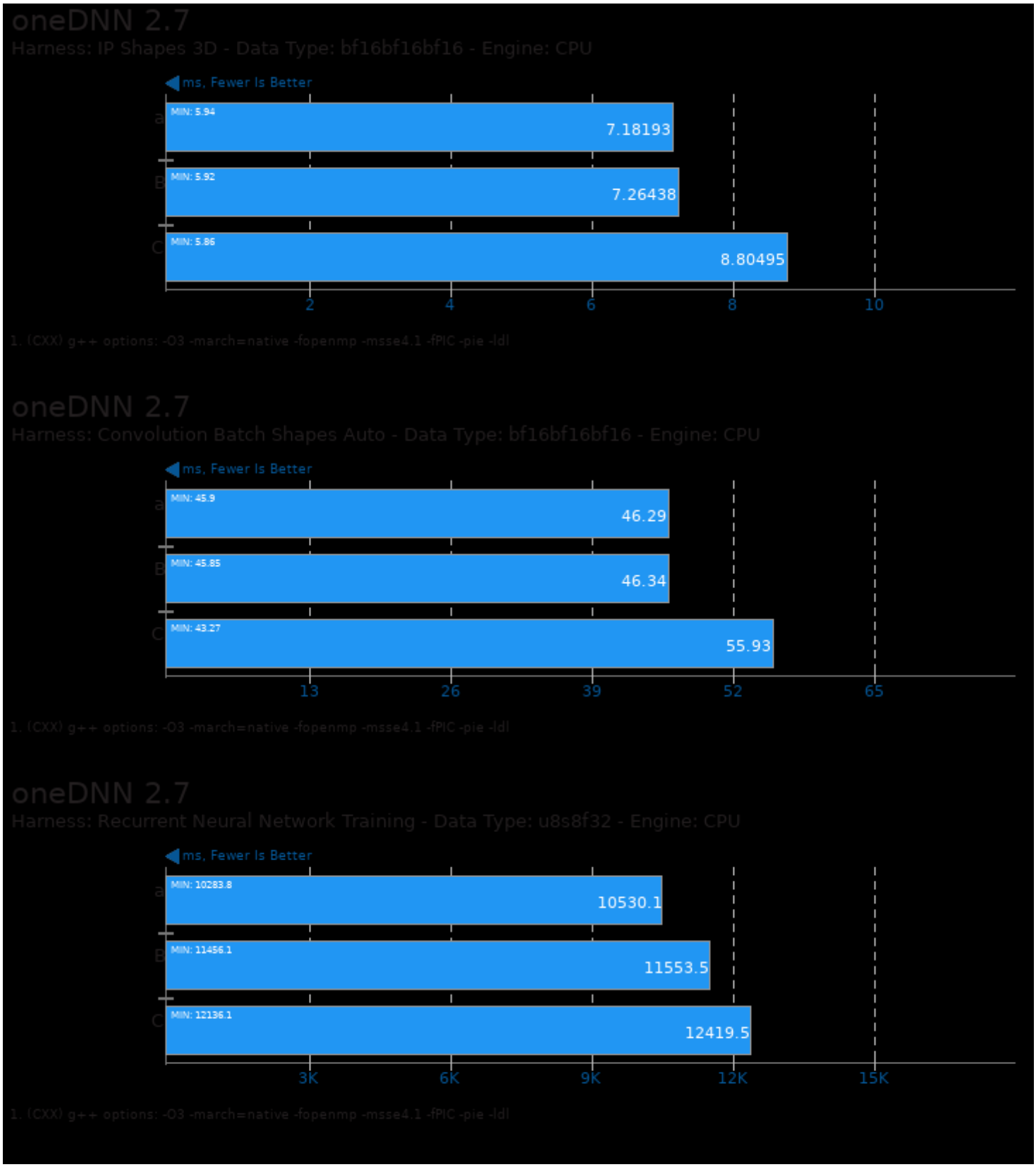


1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

dnn


oneDNN 2.7
Harness: Deconvolution Batch shapes_1d - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
MIN: 60.94
67.24
MIN: 81.12
88.53
MIN: 84.63
91.03
20
40
60
80
100
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
MIN: 8593.52
8712.07
MIN: 11484.4
11575.60
MIN: 11481.1
11646.00
2K
4K
6K
8K
10K
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
MIN: 2.41
2.53521
MIN: 2.41
2.56851
MIN: 2.39
3.25521
0.7324
1.4648
2.1972
2.9296
3.662
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

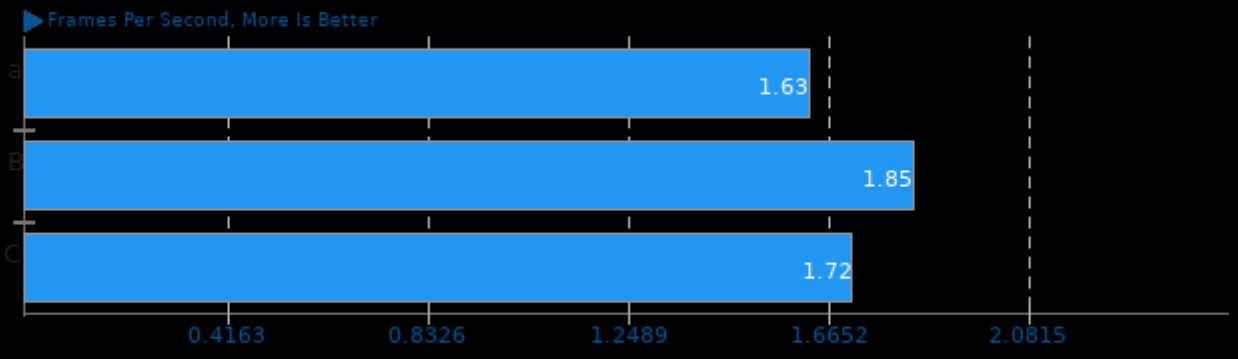
dnn


oneDNN 2.7
Harness: IP Shapes 3D - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
MIN: 5.94
7.18193
MIN: 5.92
7.26438
MIN: 5.86
8.80495
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: Convolution Batch Shapes Auto - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
MIN: 45.9
46.29
MIN: 45.85
46.34
MIN: 43.27
55.93
13
26
39
52
65
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
MIN: 10283.8
10530.1
MIN: 11456.1
11553.5
MIN: 12136.1
12419.5
3K
6K
9K
12K
15K
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

dnn

AOM AV1 3.5

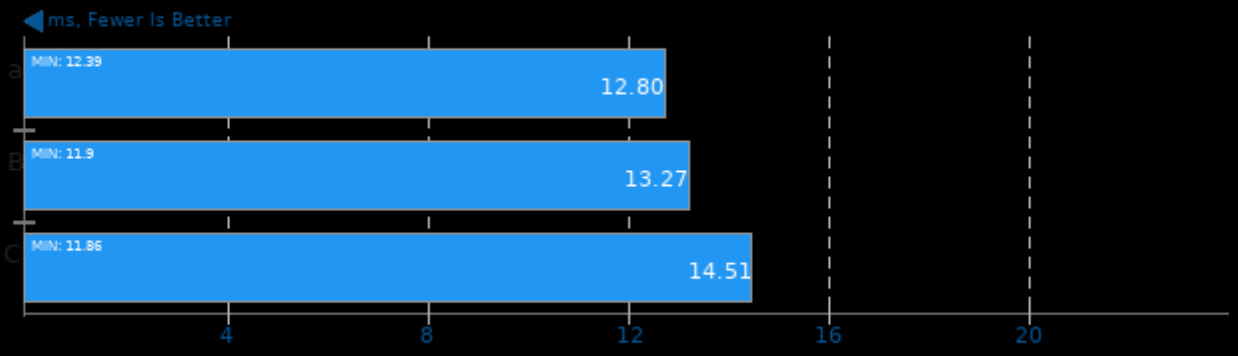
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

oneDNN 2.7

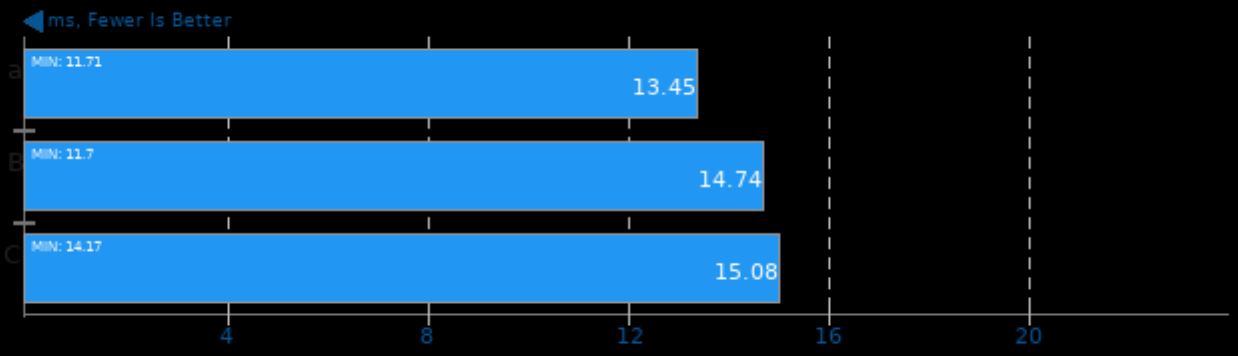
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

oneDNN 2.7

Harness: Matrix Multiply Batch Shapes Transformer - Data Type: bf16bf16bf16 - Engine: CPU

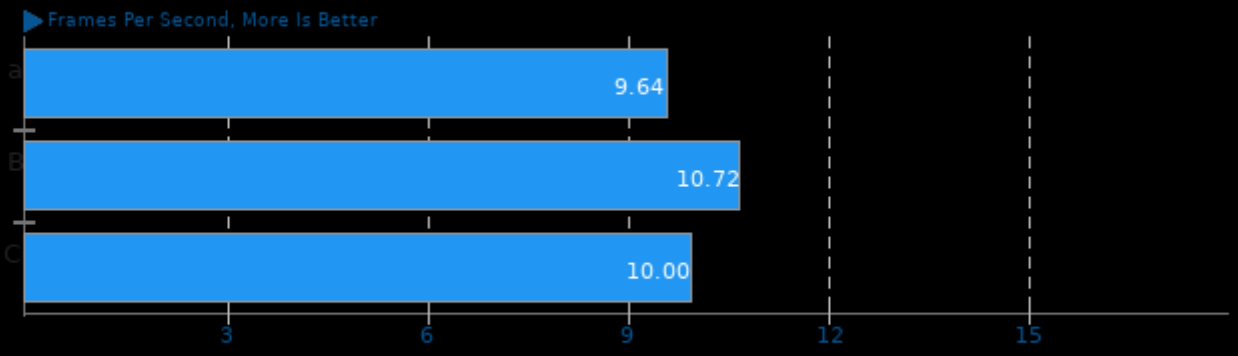


1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

dnn

AOM AV1 3.5

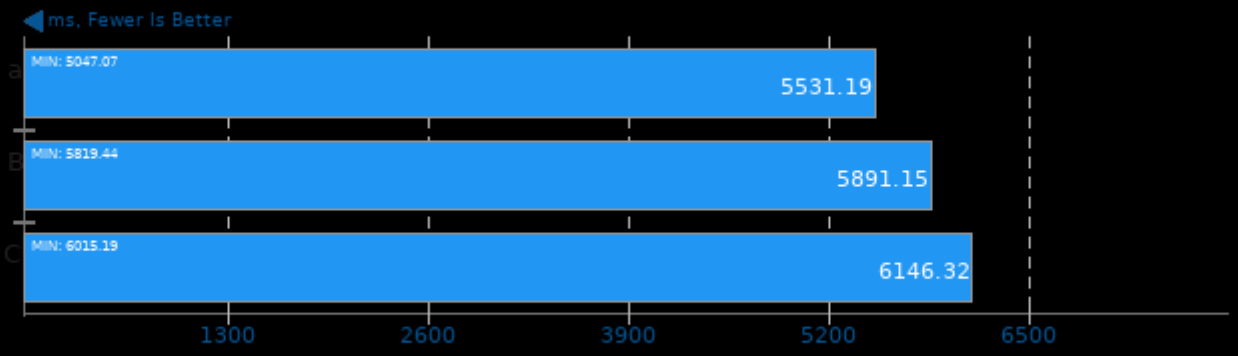
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

oneDNN 2.7

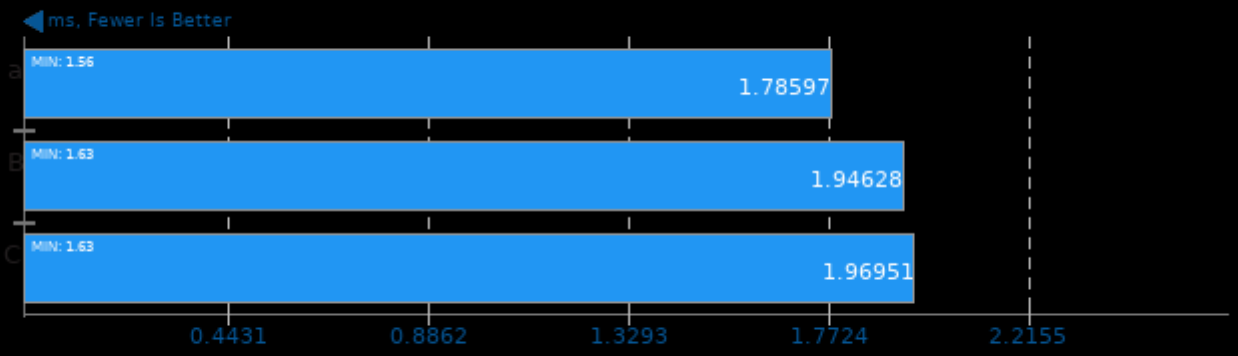
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

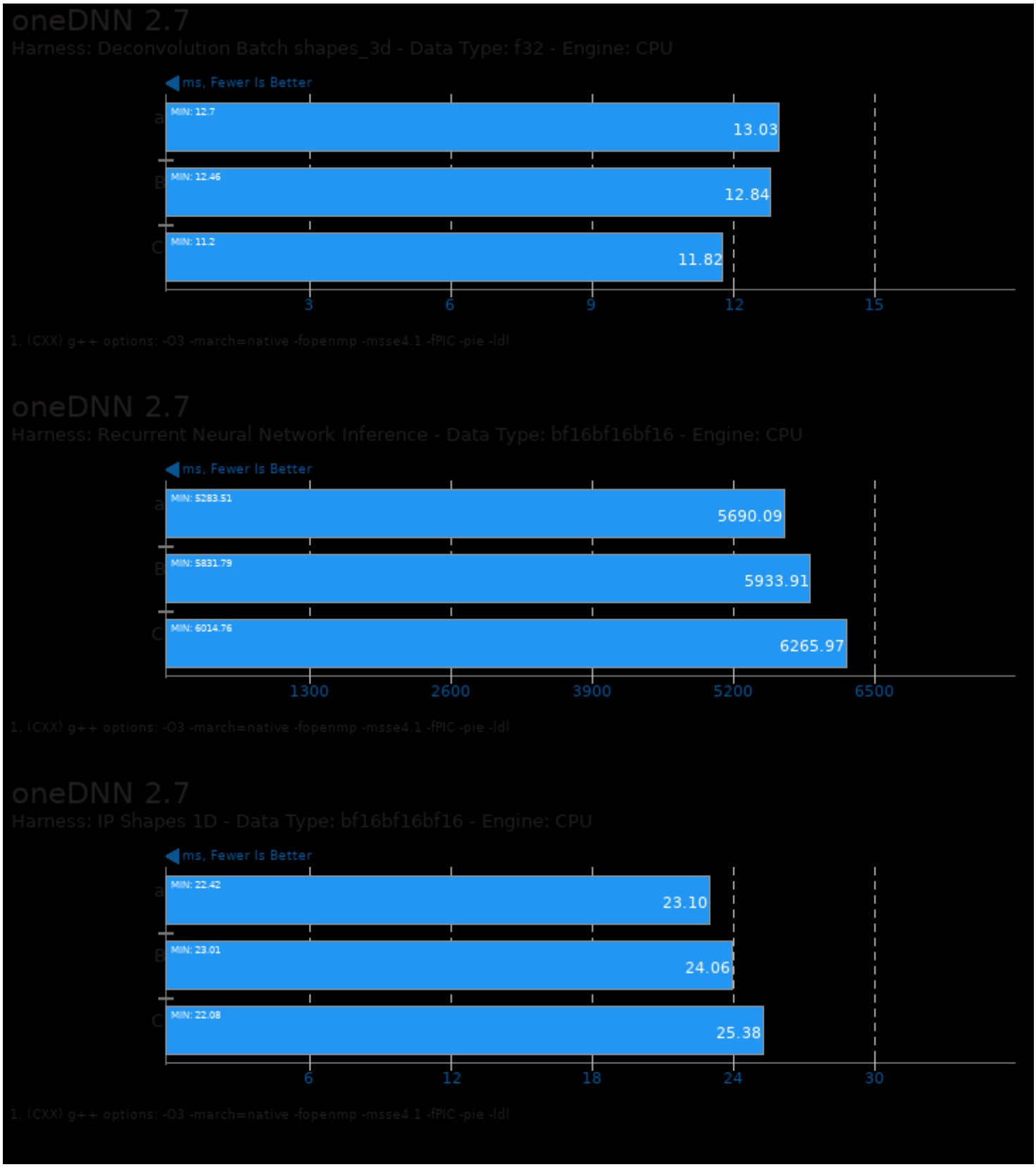
oneDNN 2.7

Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU

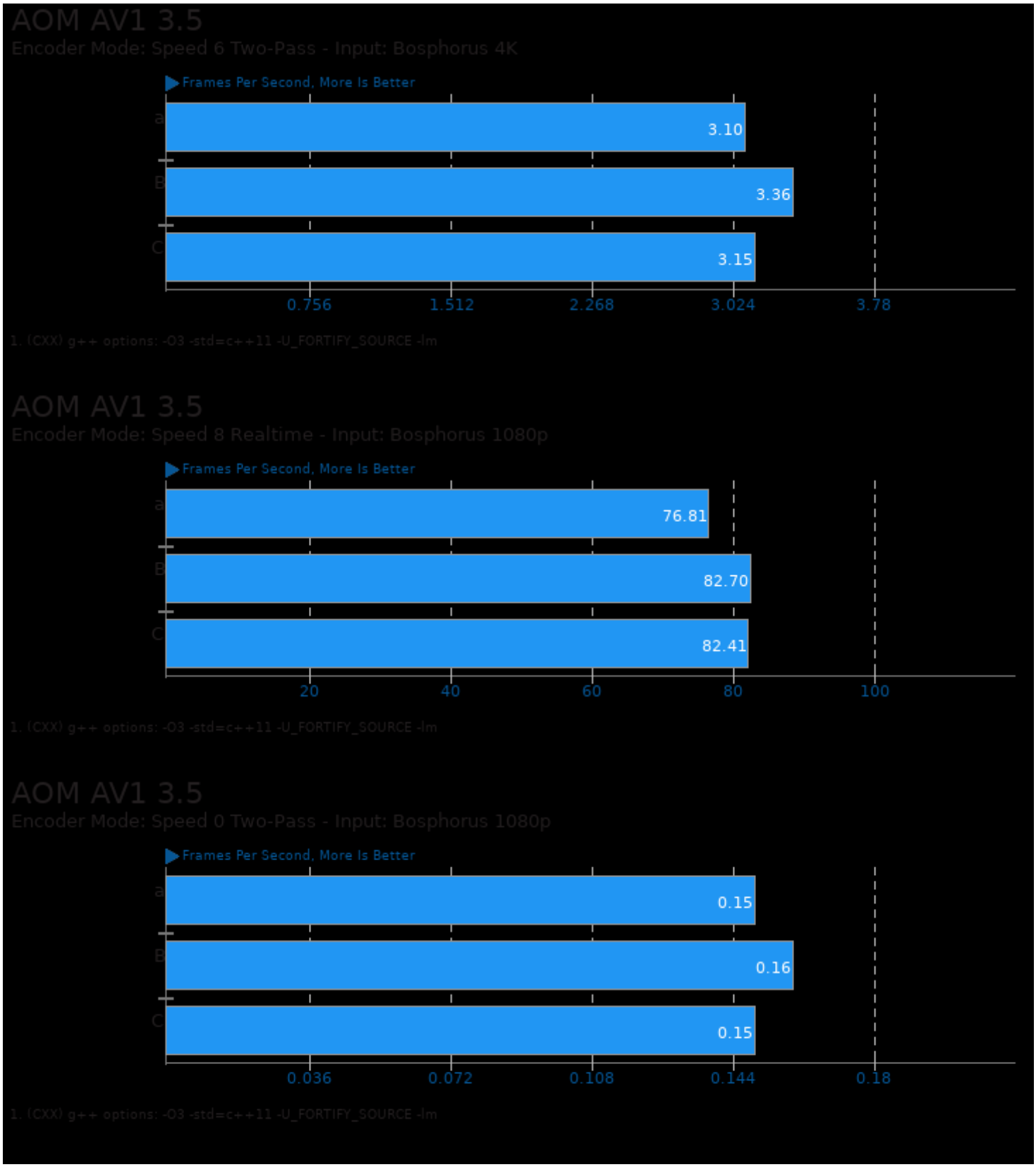


1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

dnn


oneDNN 2.7
Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
MIN: 12.7
13.03
MIN: 12.46
12.84
MIN: 11.2
11.82
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
MIN: 5283.51
5690.09
MIN: 5831.79
5933.91
MIN: 6014.76
6265.97
1300
2600
3900
5200
6500
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: IP Shapes 1D - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
MIN: 22.42
23.10
MIN: 23.01
24.06
MIN: 22.08
25.38
6
12
18
24
30
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

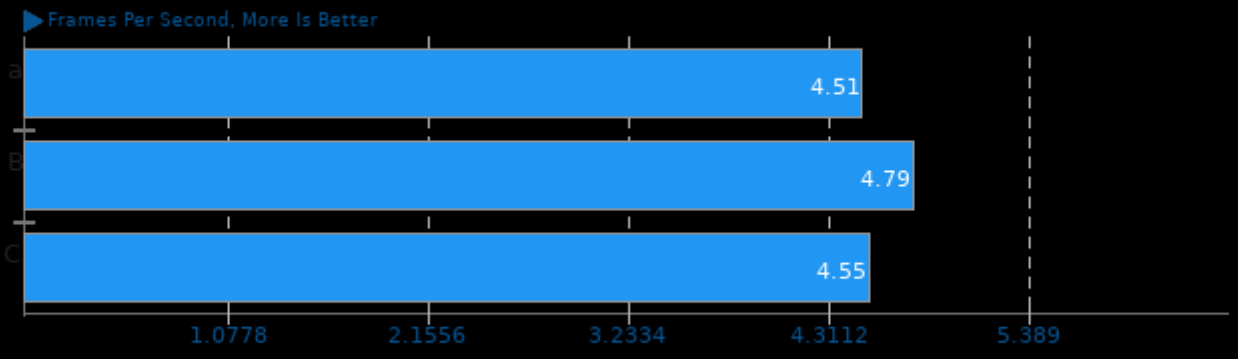
dnn


AOM AV1 3.5
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
a
B
C
3.10
3.36
3.15
0.756
1.512
2.268
3.024
3.78
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.5
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
a
B
C
76.81
82.70
82.41
20
40
60
80
100
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.5
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
a
B
C
0.15
0.16
0.15
0.036
0.072
0.108
0.144
0.18
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

dnn

AOM AV1 3.5

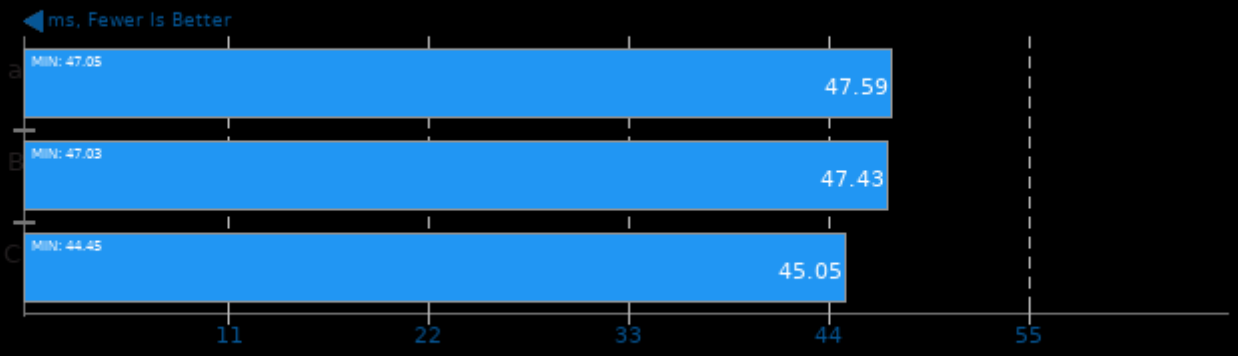
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

oneDNN 2.7

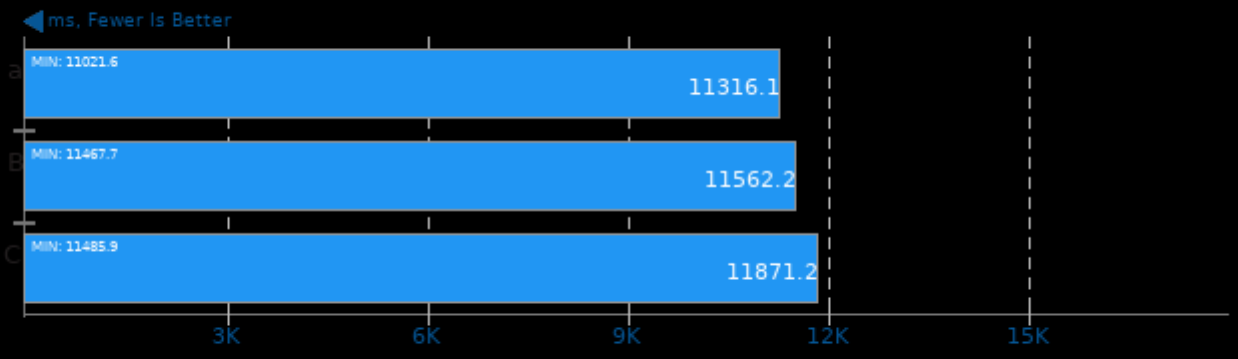
Harness: Deconvolution Batch shapes_3d - Data Type: bf16bf16bf16 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

oneDNN 2.7

Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU

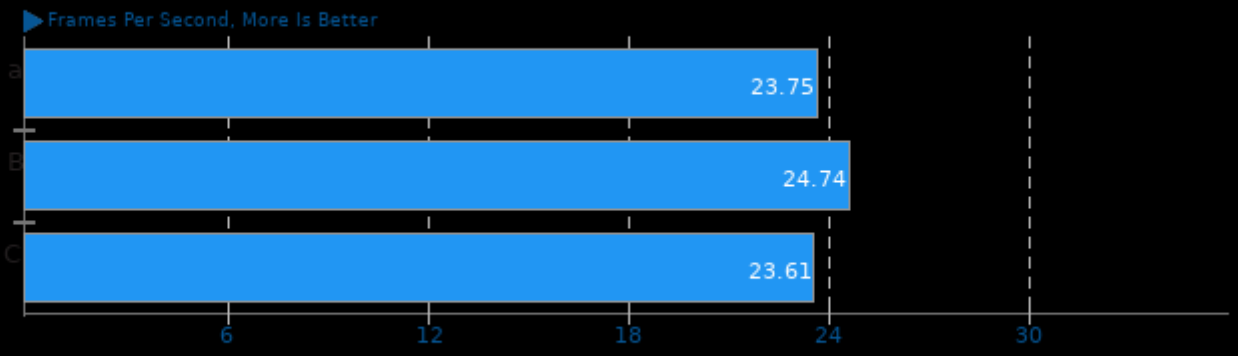


1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

dnn

AOM AV1 3.5

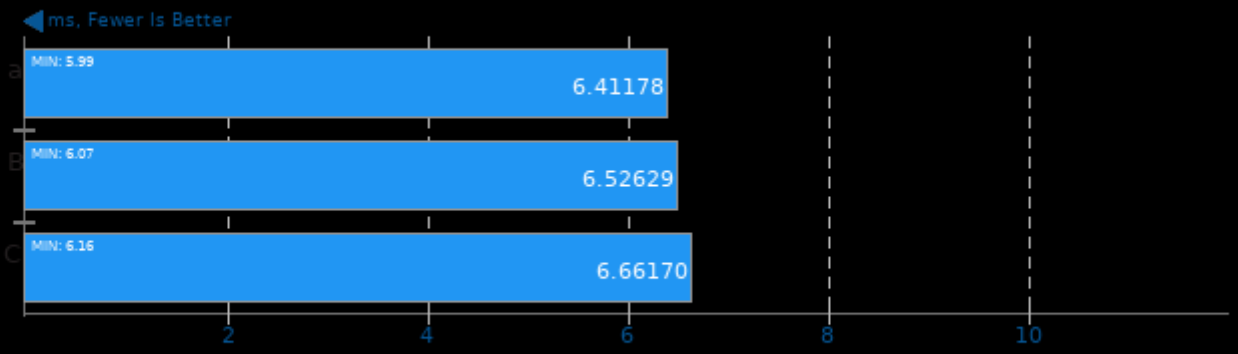
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

oneDNN 2.7

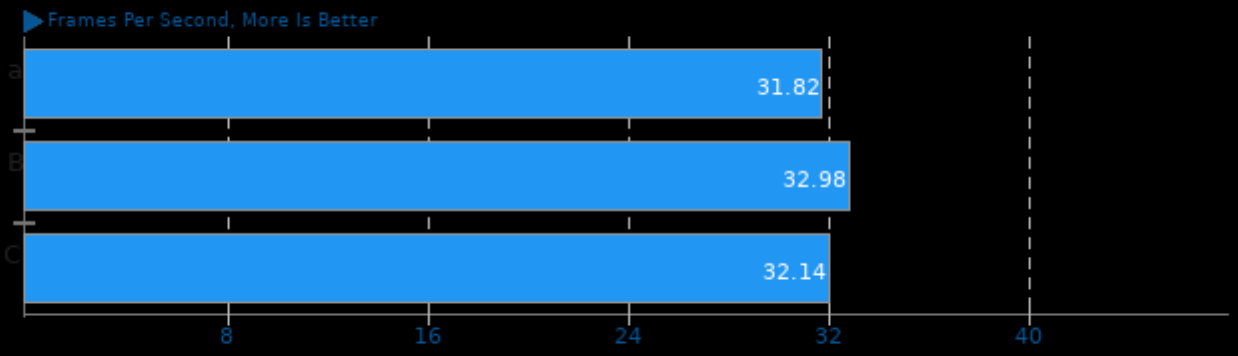
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

AOM AV1 3.5

Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K

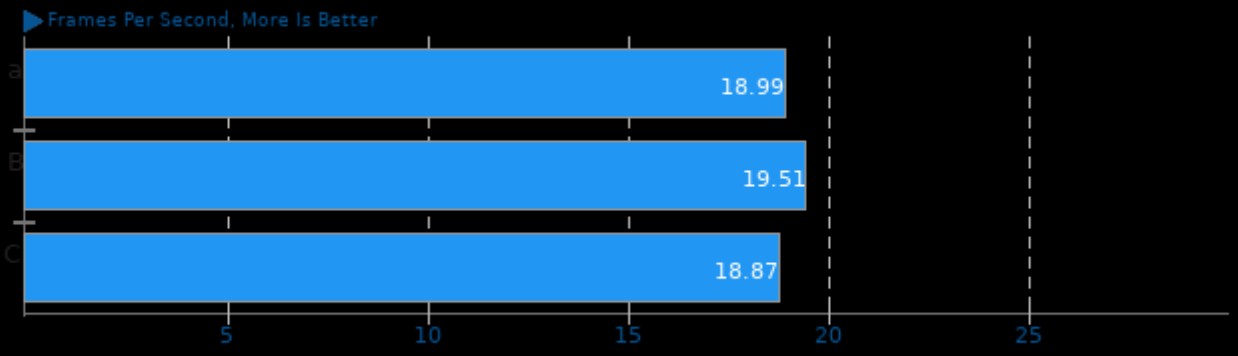


1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

dnn

AOM AV1 3.5

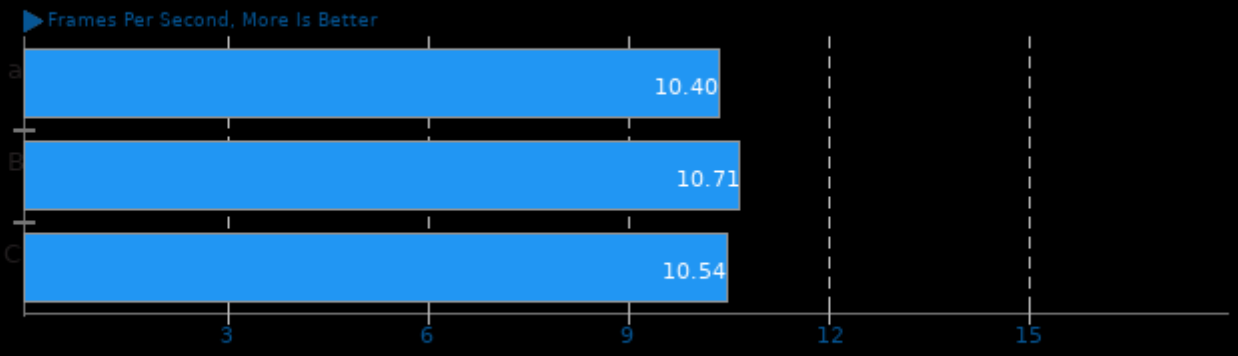
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

AOM AV1 3.5

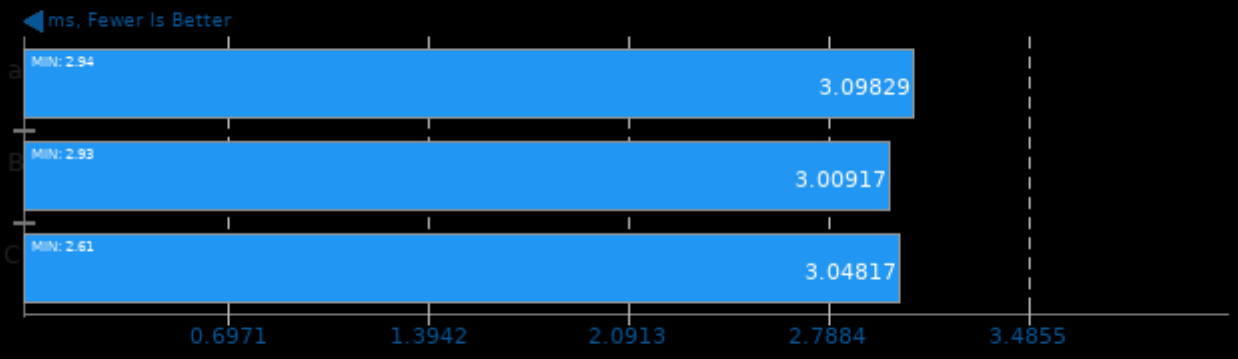
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

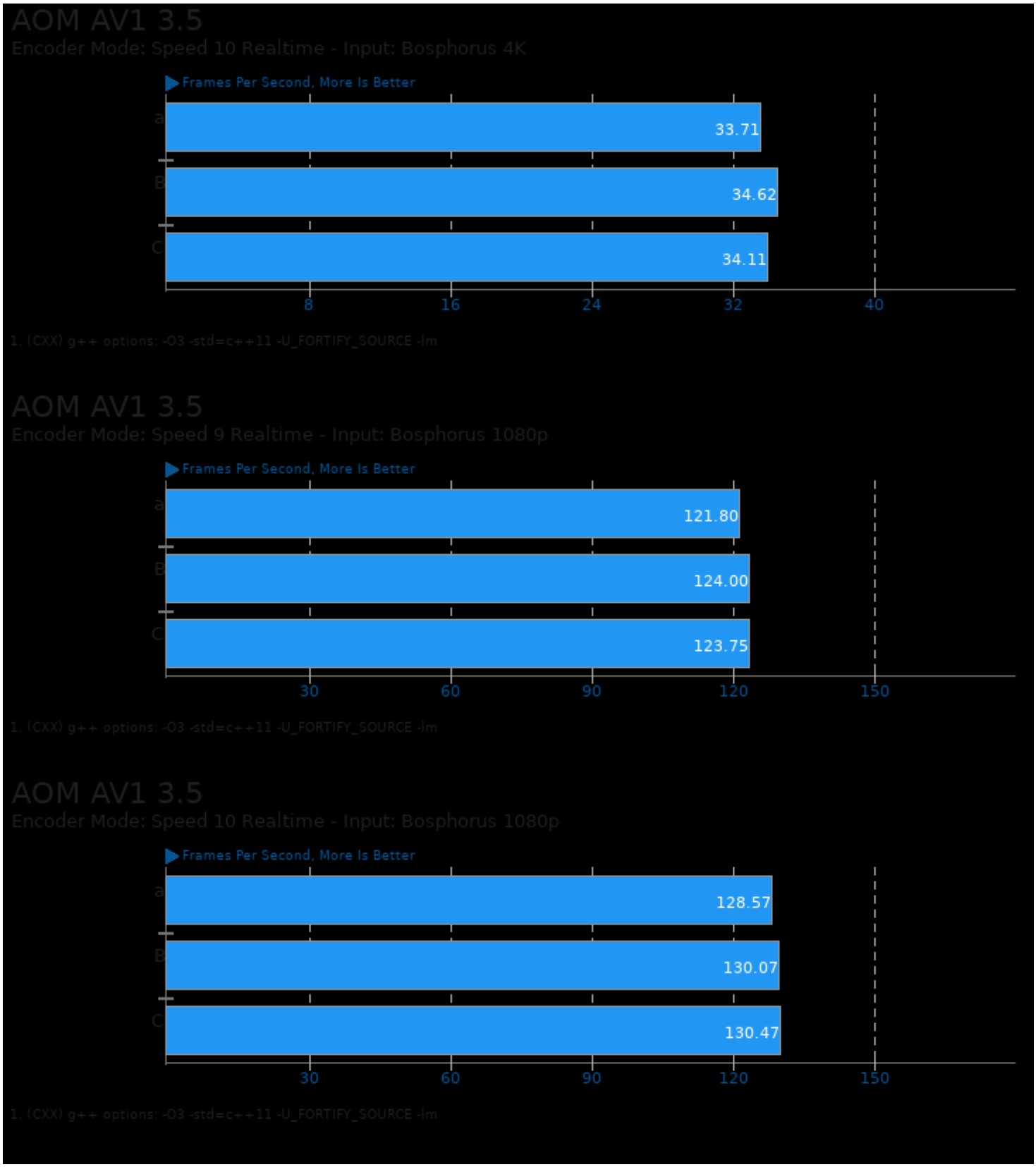
oneDNN 2.7

Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU

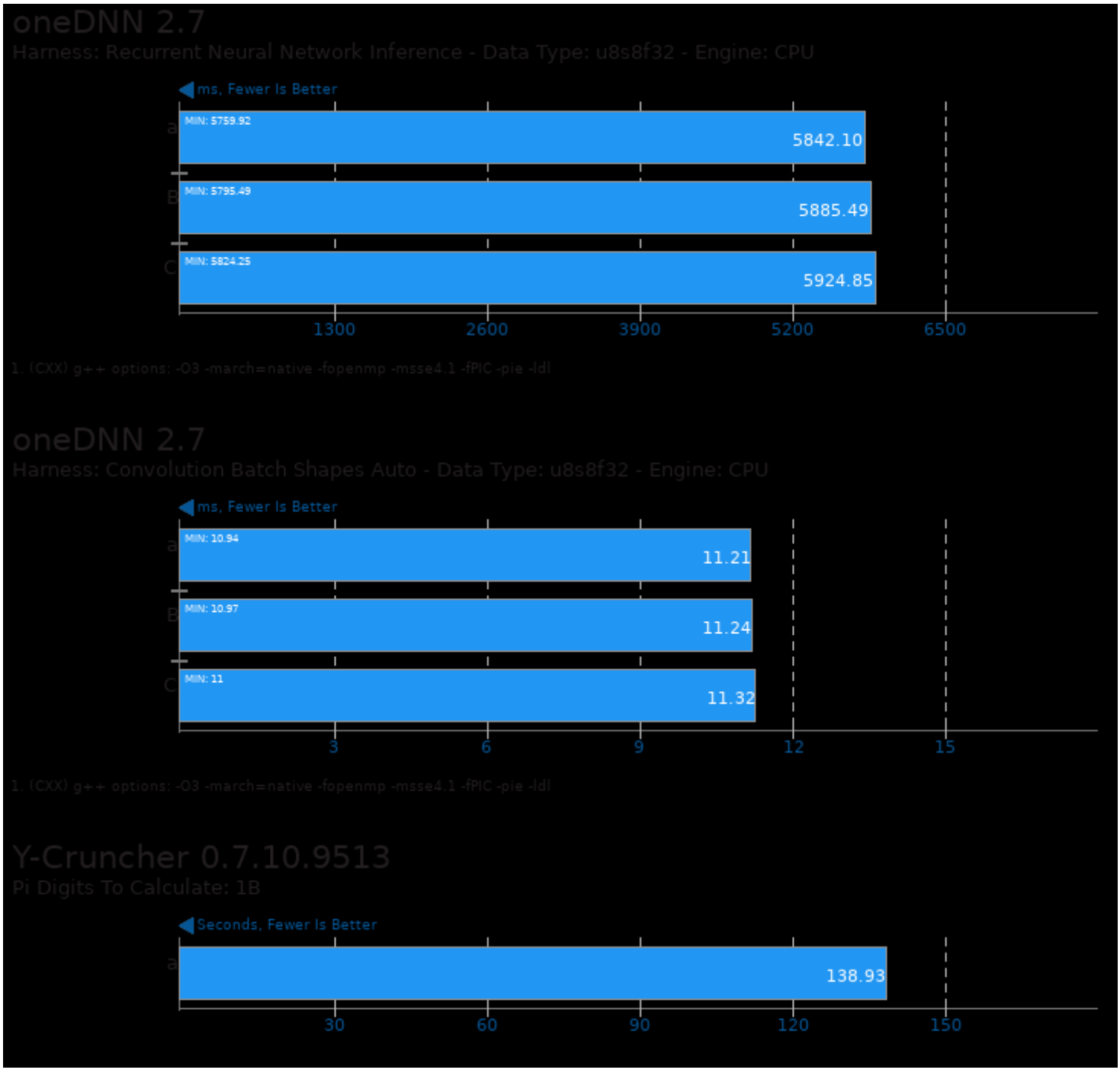


1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl

dnn


AOM AV1 3.5
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
a
33.71
B
34.62
C
34.11
8
16
24
32
40
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.5
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
a
121.80
B
124.00
C
123.75
30
60
90
120
150
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.5
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
a
128.57
B
130.07
C
130.47
30
60
90
120
150
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

dnn


oneDNN 2.7
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
MIN: 5759.92
5842.10
MIN: 5795.49
5885.49
MIN: 5824.25
5924.85
1300
2600
3900
5200
6500
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
oneDNN 2.7
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
MIN: 10.94
11.21
MIN: 10.97
11.24
MIN: 11
11.32
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -pie -ldl
Y-Cruncher 0.7.10.9513
Pi Digits To Calculate: 1B
Seconds, Fewer Is Better
138.93
30
60
90
120
150

dnn

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



Geometric mean based upon tests: pts/aom-av1 and pts/onednn



Geometric mean based upon tests: pts/aom-av1 and pts/onednn

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 04:56.