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Coder Radio XPS 13 ML Ubuntu Benchmark

Intel Core i7-10510U testing with a LENOVO 20U9CTO1WW (N2WET24W 1.14 BIOS) and Intel UHD 3GB on Fedora 33 via the Phoronix Test Suite.

Automated Executive Summary

XPS 13 Tiger Lake Ubuntu 20.04 had the most wins, coming in first place for 96% of the tests.

Based on the geometric mean of all complete results, the fastest (XPS 13 Tiger Lake Ubuntu 20.04) was 1.488x the speed of the slowest (ThinkPad X1 Fedora Comet Lake).

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

oneDNN (Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU) at 7.436x
oneDNN (Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU) at 2.722x
oneDNN (Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU) at 2.664x
oneDNN (Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU) at 2.608x
oneDNN (Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU) at 2.419x
oneDNN (Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU) at 1.904x
PlaidML (FP16: No - Mode: Inference - Network: VGG16 - Device: CPU) at 1.73x
Mobile Neural Network (Model: resnet-v2-50) at 1.615x
NCNN (Target: CPU - Model: vgg16) at 1.587x

NCNN (Target: Vulkan GPU - Model: vgg16) at 1.557x.

Test Systems:

XPS 13 Tiger Lake Ubuntu 20.04

Processor: Intel Core i5-1135G7 @ 4.20GHz (4 Cores / 8 Threads), Motherboard: Dell 0THX8P (1.1.1 BIOS), Chipset: Intel Device a0ef, Memory: 16GB, Disk: Micron 2300 NVMe 512GB, Graphics: Intel Xe 3GB (1300MHz), Audio: Realtek ALC289, Network: Intel Device a0f0

OS: Ubuntu 20.04, Kernel: 5.6.0-1036-oem (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.8, Vulkan: 1.2.131, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1200

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=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr,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: 0x60 - Thermald 1.9.1
Python Notes: Python 3.8.5
Security Notes: itlb_multihit: Not affected + 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: Not affected

ThinkPad X1 Fedora Comet Lake

Processor: Intel Core i7-10510U @ 4.90GHz (4 Cores / 8 Threads), Motherboard: LENOVO 20U9CTO1WW (N2WET24W 1.14 BIOS), Chipset: Intel Comet Lake PCH-LP, Memory: 2 x 8 GB LPDDR3-2133MT/s Samsung, Disk: 256GB Western Digital PC SN730 SDBQNTY-256G-1001, Graphics: Intel UHD 3GB (1150MHz), Audio: Realtek ALC285, Network: Intel + Intel Comet Lake PCH-LP CNVi WiFi

OS: Fedora 33, Kernel: 5.9.16-200.fc33.x86_64 (x86_64), Desktop: KDE Plasma 5.20.4, Display Server: X Server 1.20.10, Display Driver: modesetting 1.20.10, OpenGL: 4.6 Mesa 20.2.6, Compiler: GCC 10.2.1 20201125 + Clang 11.0.0, File-System: btrfs, Screen Resolution: 2560x1440

Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,objc,obj-c++,ada,go,d,lto --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-gcc-major-version-only --with-isl --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 3.9.1
Security Notes: SELinux + itlb_multihit: KVM: Mitigation of VMX unsupported + 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: Mitigation of TSX disabled + tsx_async_abort: Not affected

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	XPS 13 Tiger Lake Ubuntu 20.04	ThinkPad X1 Fedora Comet Lake
AI Benchmark Alpha - D.I.S (Score)	556	
AI Benchmark Alpha - D.T.S (Score)	630	
AI Benchmark Alpha - Device AI Score (Score)	1186	
Mlpack Benchmark - scikit_ica (sec)	123.23	
Standard Deviation	2.7%	
Mlpack Benchmark - scikit_qda (sec)	138.24	
Standard Deviation	0.1%	
Mlpack Benchmark - scikit_svm (sec)	34.66	
Standard Deviation	0.2%	
Mlpack Benchmark - scikit_linearridgeregression	13.50	
Standard Deviation	0.3%	
Mobile Neural Network - SqueezeNetV1.0 (ms)	11.256	18.04
Normalized	100%	62.39%
Standard Deviation	7%	0.9%
Mobile Neural Network - resnet-v2-50 (ms)	54.691	88.35
Normalized	100%	61.9%
Standard Deviation	1%	3.3%
Mobile Neural Network - MobileNetV2_224 (ms)	6.238	9.62
Normalized	100%	64.84%
Standard Deviation	0.7%	21.1%
Mobile Neural Network - mobilenet-v1-1.0 (ms)	8.320	13.15
Normalized	100%	63.27%
Standard Deviation	6.8%	13.8%
Mobile Neural Network - inception-v3 (ms)	68.523	97.71
Normalized	100%	70.13%
Standard Deviation	1.2%	8.8%
NCNN - CPU - mobilenet (ms)	35.03	45.37
Normalized	100%	77.21%
Standard Deviation	2.8%	7.3%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	7.78	10.67
Normalized	100%	72.91%
Standard Deviation	1.2%	18.8%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	6.71	9.10
Normalized	100%	73.74%
Standard Deviation	0.5%	13%
NCNN - CPU - shufflenet-v2 (ms)	9.99	14.58
Normalized	100%	68.52%
Standard Deviation	10.2%	15.8%
NCNN - CPU - mnasnet (ms)	8.10	9.76
Normalized	100%	82.99%
Standard Deviation	10.8%	13.9%
NCNN - CPU - efficientnet-b0 (ms)	12.53	15.22
Normalized	100%	82.33%
Standard Deviation	0.5%	11.7%
NCNN - CPU - blazeface (ms)	2.85	3.80
Normalized	100%	75%
Standard Deviation	1.4%	10.3%
NCNN - CPU - googlenet (ms)	25.01	31.39
Normalized	100%	79.68%
Standard Deviation	0.8%	9.8%
NCNN - CPU - vgg16 (ms)	68.50	108.71
Normalized	100%	63.01%

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Standard Deviation	0.6%	4.3%
NCNN - CPU - resnet18 (ms)	**22.07**	**30.23**
Normalized	100%	73.01%
Standard Deviation	0.2%	9.1%
NCNN - CPU - alexnet (ms)	**19.06**	**26.55**
Normalized	100%	71.79%
Standard Deviation	0.1%	5.7%
NCNN - CPU - resnet50 (ms)	**51.01**	**67.20**
Normalized	100%	75.91%
Standard Deviation	0.4%	11%
NCNN - CPU - yolov4-tiny (ms)	**44.65**	**57.10**
Normalized	100%	78.2%
Standard Deviation	2.1%	7.1%
NCNN - CPU - squeezenet_ssd (ms)	**39.61**	**45.61**
Normalized	100%	86.84%
Standard Deviation	1%	7.6%
NCNN - CPU - regnety_400m (ms)	**21.11**	**22.34**
Normalized	100%	94.49%
Standard Deviation	1.4%	9.7%
NCNN - Vulkan GPU - mobilenet (ms)	**35.11**	**46.41**
Normalized	100%	75.65%
Standard Deviation	2.4%	0.5%
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2 (ms)	**7.71**	**9.64**
Normalized	100%	79.98%
Standard Deviation	0.6%	24.2%
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3 (ms)	**6.70**	**8.28**
Normalized	100%	80.92%
Standard Deviation	0.2%	20.2%
NCNN - Vulkan GPU - shufflenet-v2 (ms)	**10.30**	**12.80**
Normalized	100%	80.47%
Standard Deviation	11.2%	28.3%
NCNN - Vulkan GPU - mnasnet (ms)	**8.13**	**8.77**
Normalized	100%	92.7%
Standard Deviation	11.4%	22.8%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	**11.83**	**13.74**
Normalized	100%	86.1%
Standard Deviation	9.7%	19.8%
NCNN - Vulkan GPU - blazeface (ms)	**2.80**	**3.24**
Normalized	100%	86.42%
Standard Deviation	3.8%	27.7%
NCNN - Vulkan GPU - googlenet (ms)	**24.58**	**28.85**
Normalized	100%	85.2%
Standard Deviation	4.2%	15.1%
NCNN - Vulkan GPU - vgg16 (ms)	**69.16**	**107.70**
Normalized	100%	64.22%
Standard Deviation	1.3%	2.8%
NCNN - Vulkan GPU - resnet18 (ms)	**22.25**	**28.33**
Normalized	100%	78.54%
Standard Deviation	1.3%	10.9%
NCNN - Vulkan GPU - alexnet (ms)	**19.23**	**25.75**
Normalized	100%	74.68%
Standard Deviation	1.8%	6.2%
NCNN - Vulkan GPU - resnet50 (ms)	**51.13**	**65.59**
Normalized	100%	77.95%
Standard Deviation	0.4%	15.4%

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NCNN - Vulkan GPU - yolov4-tiny (ms)	**44.68**	**58.16**
Normalized	100%	76.82%
Standard Deviation	2.2%	4.7%
NCNN - Vulkan GPU - squeezenet_ssd (ms)	**39.53**	**44.71**
Normalized	100%	88.41%
Standard Deviation	1%	9.6%
NCNN - Vulkan GPU - regnety_400m (ms)	**21.01**	**20.14**
Normalized	95.86%	100%
Standard Deviation	7.4%	18.7%
NCNN - CPUv2-yolov3v2-yolov3 - mobilenetv2-yolov3 (ms)		45.37
Standard Deviation		7.3%
NCNN - V.G.y.y - mobilenetv2-yolov3 (ms)		46.41
Standard Deviation		0.5%
Numenta Anomaly Benchmark - EXPoSE (sec)	1139	
Standard Deviation	0.4%	
Numenta Anomaly Benchmark - Relative Entropy	48.609	
Standard Deviation	3%	
Numenta Anomaly Benchmark - Windowed Gaussian (sec)	27.702	
Standard Deviation	2.6%	
Numenta Anomaly Benchmark - Earthgecko Skyline	333.639	
Standard Deviation	0.4%	
Numenta Anomaly Benchmark - B.C (sec)	81.062	
Standard Deviation	2.6%	
Numpy Benchmark (Score)	**293.18**	**299.99**
Normalized	97.73%	100%
Standard Deviation	0.3%	1.8%
oneDNN - IP Shapes 1D - f32 - CPU (ms)	**10.2773**	**15.77**
Normalized	100%	65.17%
Standard Deviation	1%	15.2%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	**6.59350**	**17.95**
Normalized	100%	36.73%
Standard Deviation	0.4%	0.1%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)	**2.43051**	**5.88**
Normalized	100%	41.34%
Standard Deviation	3.6%	0.8%
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	**2.62981**	**3.95**
Normalized	100%	66.58%
Standard Deviation	0.1%	2.5%
oneDNN - IP Shapes 1D - bf16bf16bf16 - CPU (ms)	25.8282	
Standard Deviation	0.7%	
oneDNN - IP Shapes 3D - bf16bf16bf16 - CPU (ms)	6.39979	
Standard Deviation	1.7%	
oneDNN - C.B.S.A - f32 - CPU (ms)	**11.5632**	**22.02**
Normalized	100%	52.51%
Standard Deviation	4.3%	0.1%
oneDNN - D.B.s - f32 - CPU (ms)	**14.6326**	**20.71**
Normalized	100%	70.65%
Standard Deviation	2.9%	13.8%
oneDNN - D.B.s - f32 - CPU (ms)	**13.4125**	**15.85**
Normalized	100%	84.62%
Standard Deviation	0.7%	2.9%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	**7.93450**	**21.14**

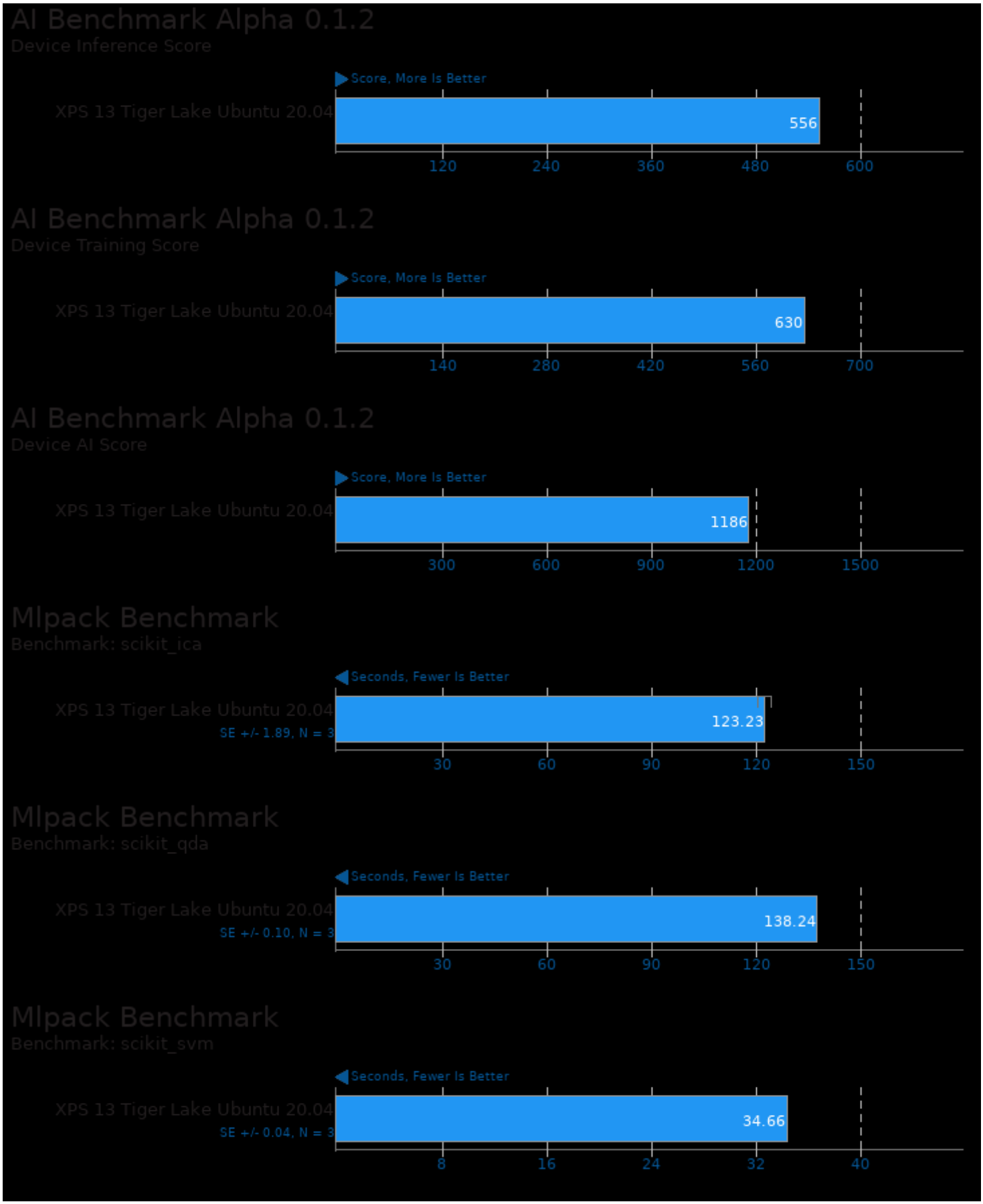
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Normalized	100%	37.53%
Standard Deviation	0.4%	1.3%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**2.94262**	**21.88**
Normalized	100%	13.45%
Standard Deviation	3.4%	0.7%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**3.13684**	**8.18**
Normalized	100%	38.35%
Standard Deviation	0.2%	1.9%
oneDNN - R.N.N.T - f32 - CPU (ms)	**8863**	**15730**
Normalized	100%	56.34%
Standard Deviation	0.1%	6.3%
oneDNN - R.N.N.I - f32 - CPU (ms)	**5736**	**8215**
Normalized	100%	69.83%
Standard Deviation	73.4%	7.4%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)	**8875**	**15829**
Normalized	100%	56.07%
Standard Deviation	0.4%	6.4%
oneDNN - C.B.S.A - bf16bf16bf16 - CPU (ms)	52.4284	
Standard Deviation	0.1%	
oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	57.0546	
Standard Deviation	2.8%	
oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	52.6824	
Standard Deviation	0.2%	
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	**4528**	**8004**
Normalized	100%	56.57%
Standard Deviation	0.4%	9.7%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	**3.93298**	**6.73**
Normalized	100%	58.44%
Standard Deviation	0.7%	9.6%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	**8859**	**15837**
Normalized	100%	55.94%
Standard Deviation	0%	7%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	**4517**	**7969**
Normalized	100%	56.68%
Standard Deviation	0.2%	9.8%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	**2.12307**	**11.82**
Normalized	100%	17.96%
Standard Deviation	0.6%	12.1%
oneDNN - M.M.B.S.T - bf16bf16bf16 - CPU (ms)	11.8072	
Standard Deviation	3.6%	
OpenCV - DNN - D.N.N (ms)	**5351**	**7968**
Normalized	100%	67.16%
Standard Deviation	2.8%	42.3%
PlaidML - No - Inference - VGG16 - CPU (FPS)	**6.47**	**3.74**
Normalized	100%	57.81%
Standard Deviation	0.6%	3%
PlaidML - No - Inference - ResNet 50 - CPU (FPS)	**3.27**	**2.57**
Normalized	100%	78.59%
Standard Deviation	0.8%	0.4%
RNNoise (sec)	31.947	
Standard Deviation	0%	
Scikit-Learn (sec)	17.900	
Standard Deviation	1.4%	
TensorFlow Lite - SqueezeNet (us)	**627487**	**769601**
Normalized	100%	81.53%

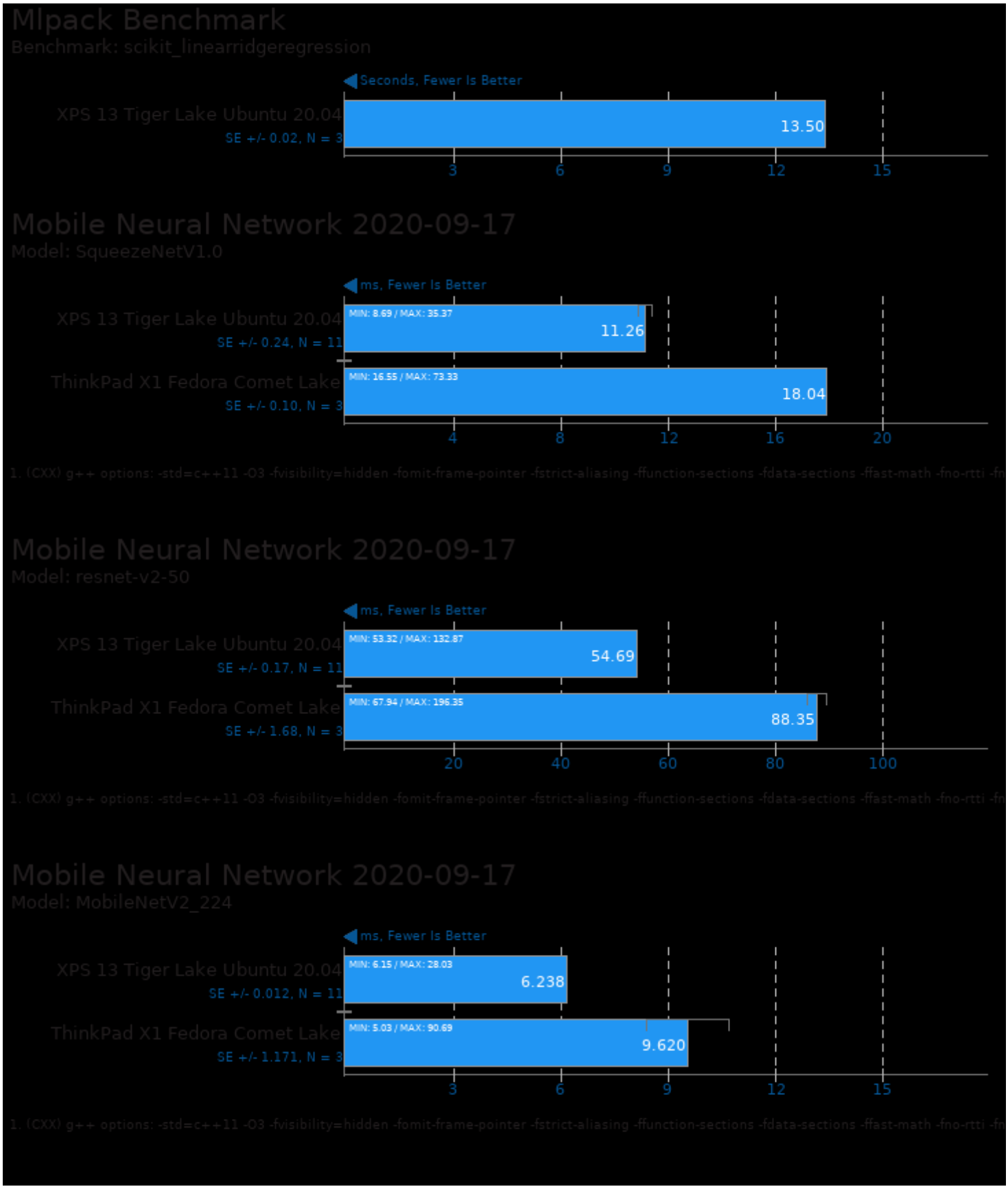
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Standard Deviation	2.8%	7.9%
TensorFlow Lite - Inception V4 (us)	**9220230**	**11134467**
Normalized	100%	82.81%
Standard Deviation	0.6%	0.3%
TensorFlow Lite - NASNet Mobile (us)	**455525**	**597569**
Normalized	100%	76.23%
Standard Deviation	1.7%	6.7%
TensorFlow Lite - Mobilenet Float (us)	**424309**	**525312**
Normalized	100%	80.77%
Standard Deviation	1.2%	7.5%
TensorFlow Lite - Mobilenet Quant (us)	**419506**	**535897**
Normalized	100%	78.28%
Standard Deviation	2%	7.6%
TensorFlow Lite - I.R.V (us)	**8329360**	**10177933**
Normalized	100%	81.84%
Standard Deviation	0.7%	1.1%

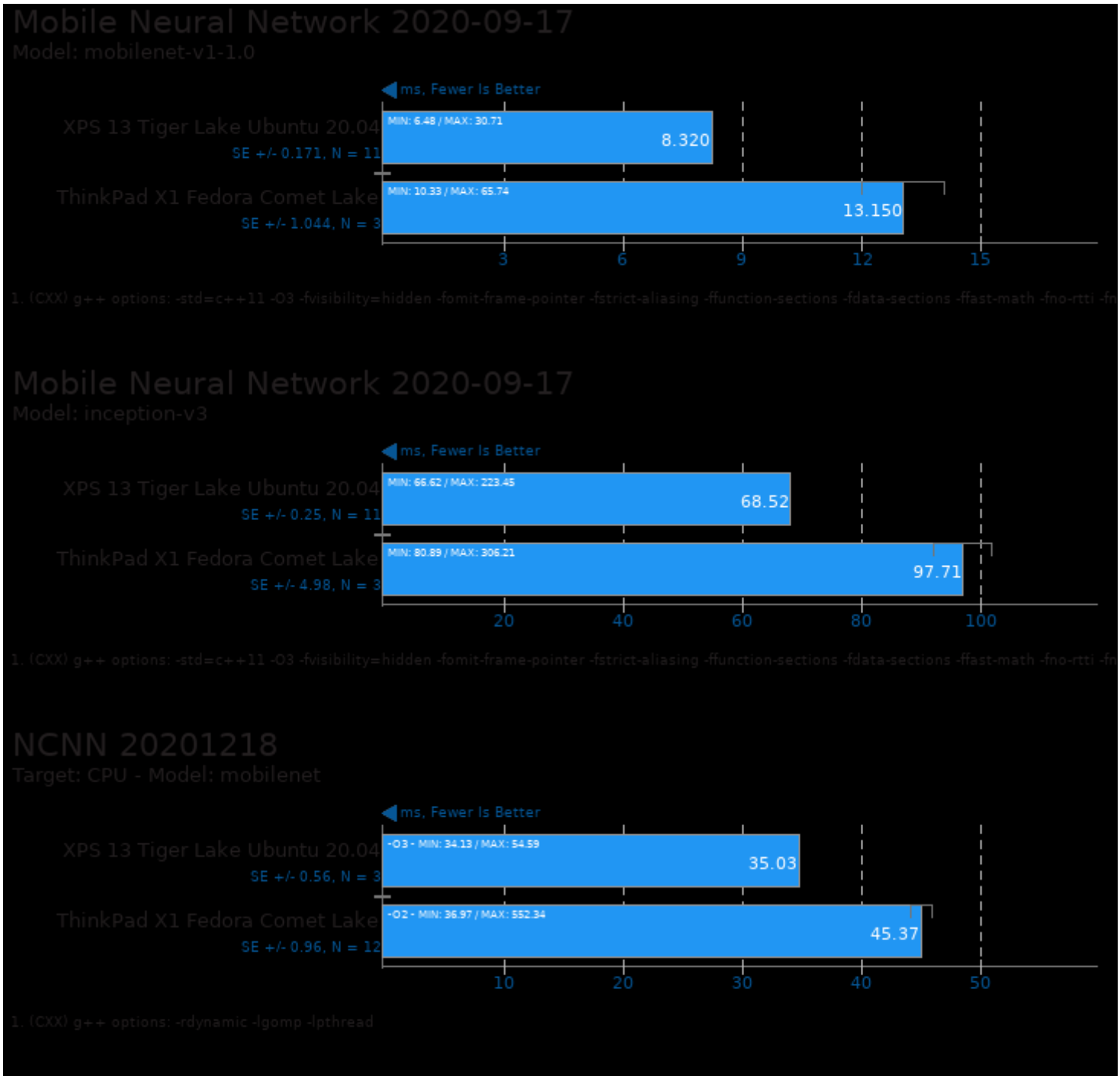
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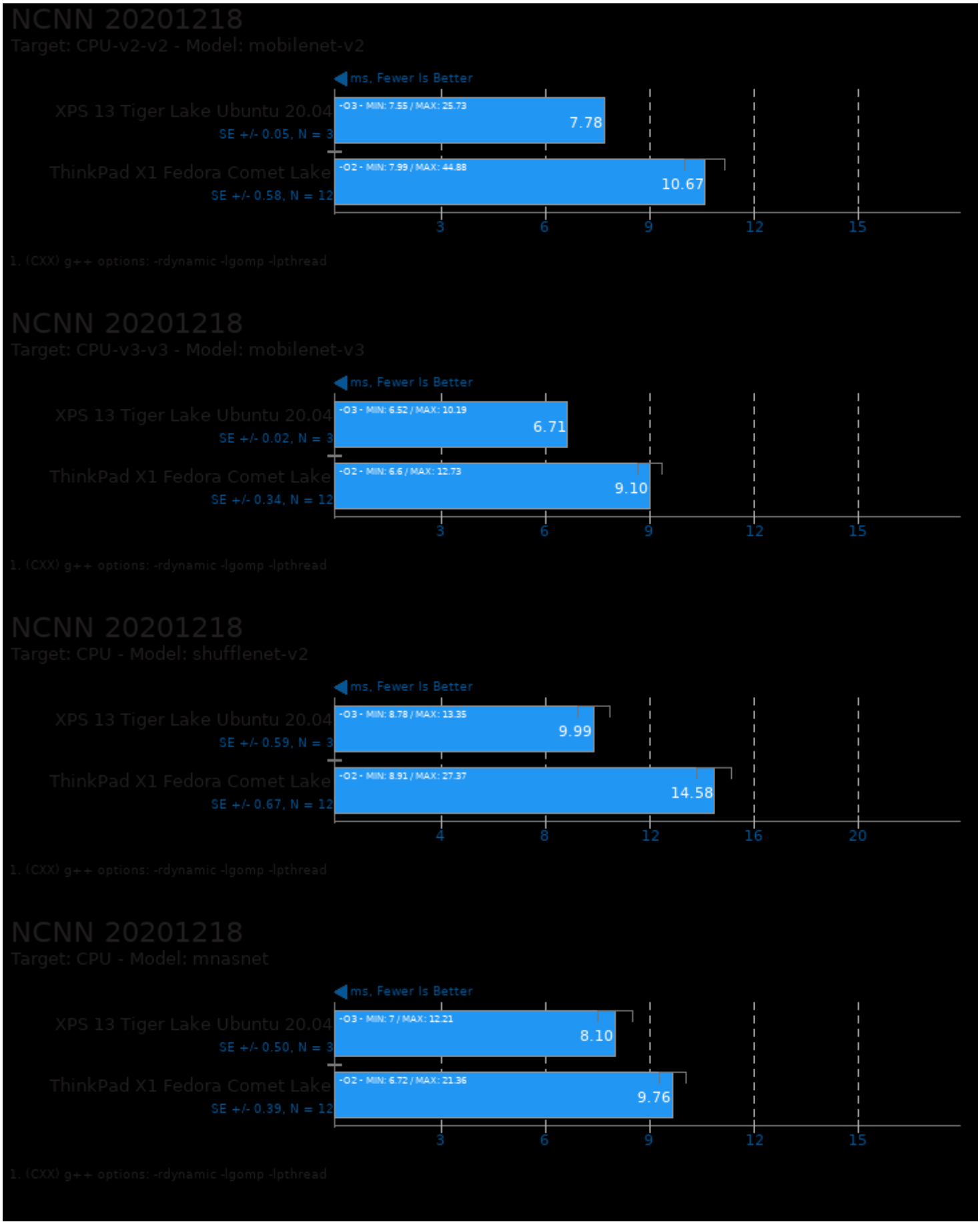


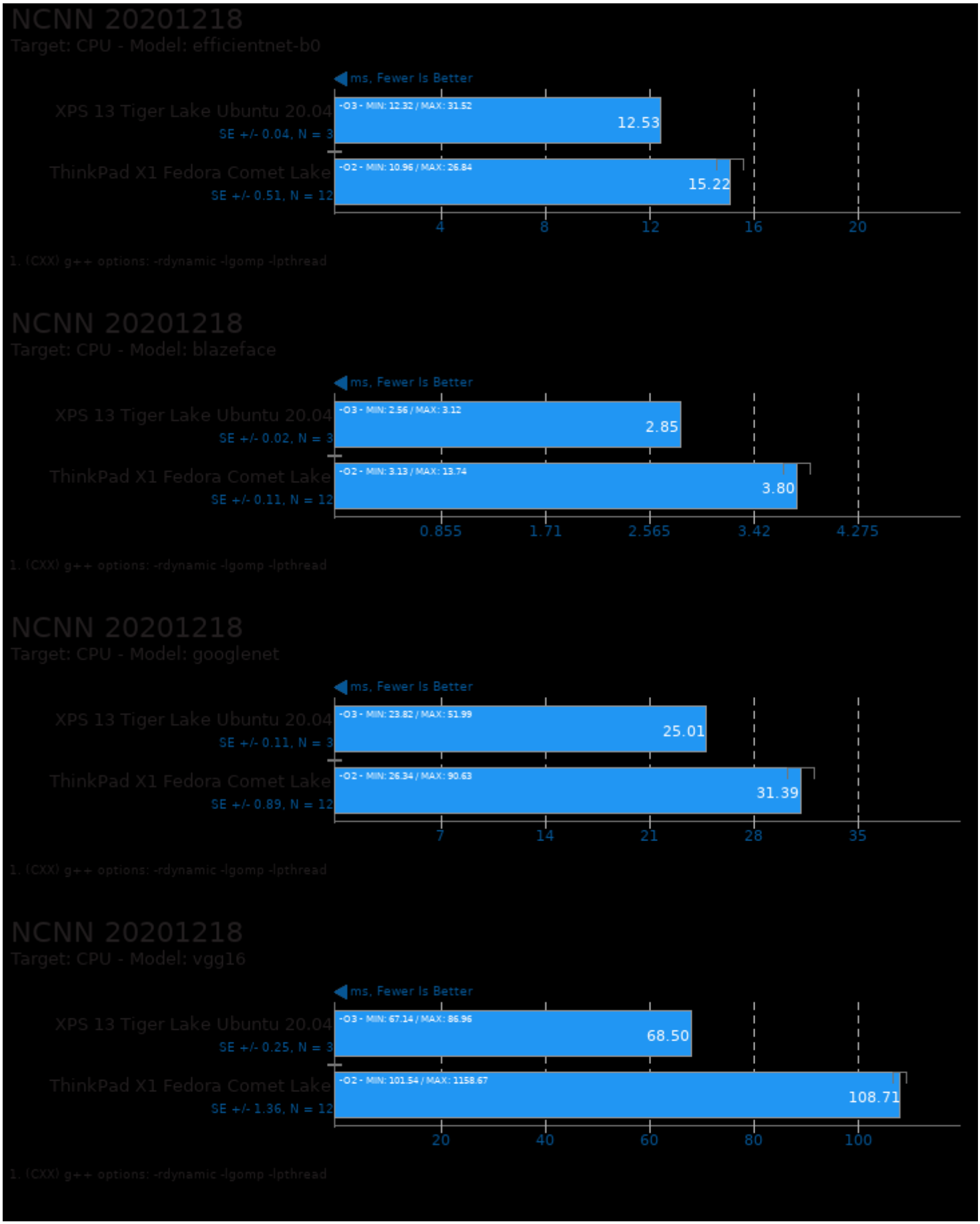
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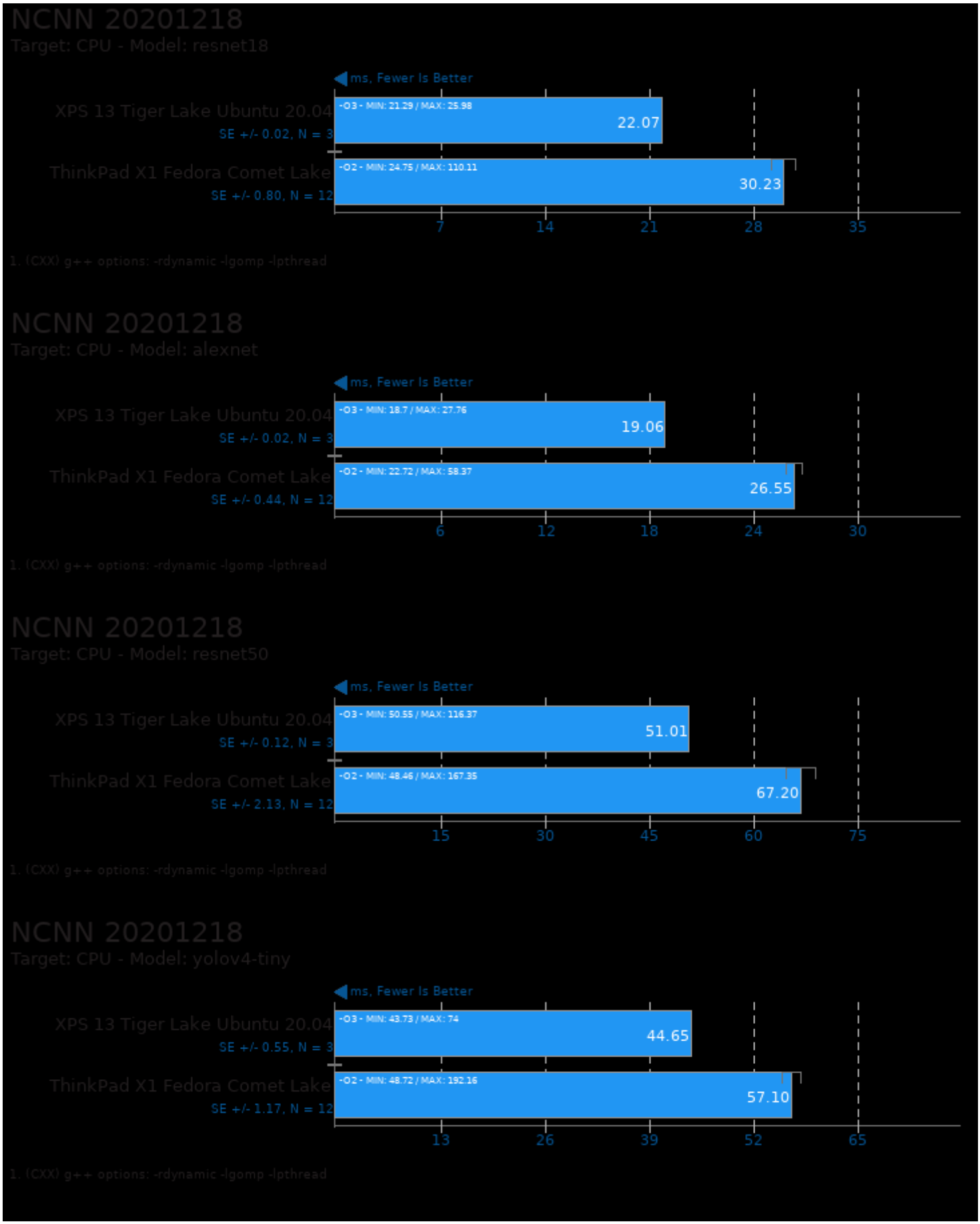
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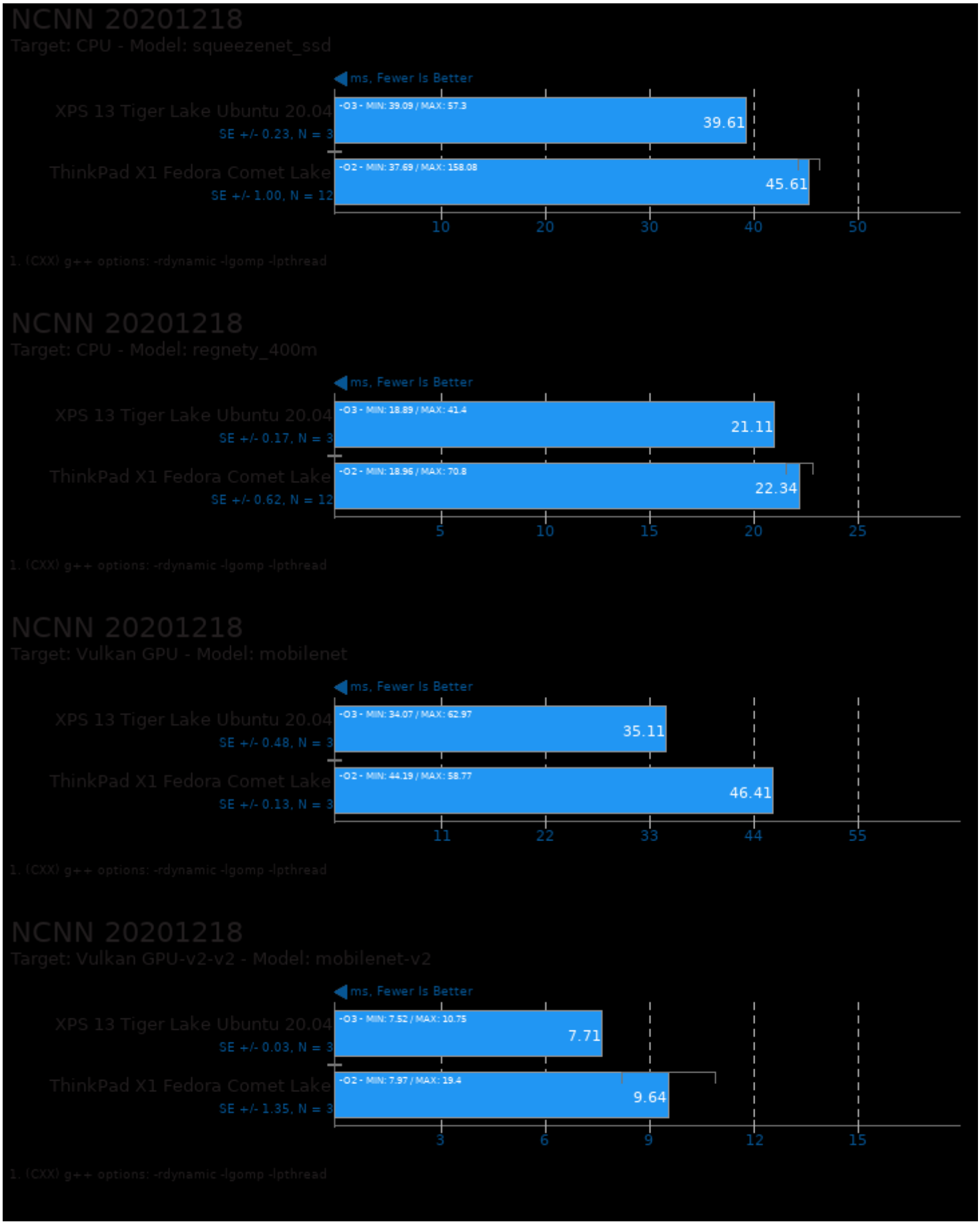

NCNN 20201218
Target: CPU-v2-v2 - Model: mobilenet-v2
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.05, N = 3
-O3 - MIN: 7.55 / MAX: 25.73
7.78
ThinkPad X1 Fedora Comet Lake
SE +/- 0.58, N = 12
-O2 - MIN: 7.99 / MAX: 44.88
10.67
3
6
9
12
15
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU-v3-v3 - Model: mobilenet-v3
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.02, N = 3
-O3 - MIN: 6.52 / MAX: 10.19
6.71
ThinkPad X1 Fedora Comet Lake
SE +/- 0.34, N = 12
-O2 - MIN: 6.6 / MAX: 12.73
9.10
3
6
9
12
15
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: shufflenet-v2
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.59, N = 3
-O3 - MIN: 8.78 / MAX: 13.35
9.99
ThinkPad X1 Fedora Comet Lake
SE +/- 0.67, N = 12
-O2 - MIN: 8.91 / MAX: 27.37
14.58
4
8
12
16
20
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: mnasnet
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.50, N = 3
-O3 - MIN: 7 / MAX: 12.21
8.10
ThinkPad X1 Fedora Comet Lake
SE +/- 0.39, N = 12
-O2 - MIN: 6.72 / MAX: 21.36
9.76
3
6
9
12
15
1. (CXX) g++ options: -rdynamic -lgomp -lpthread

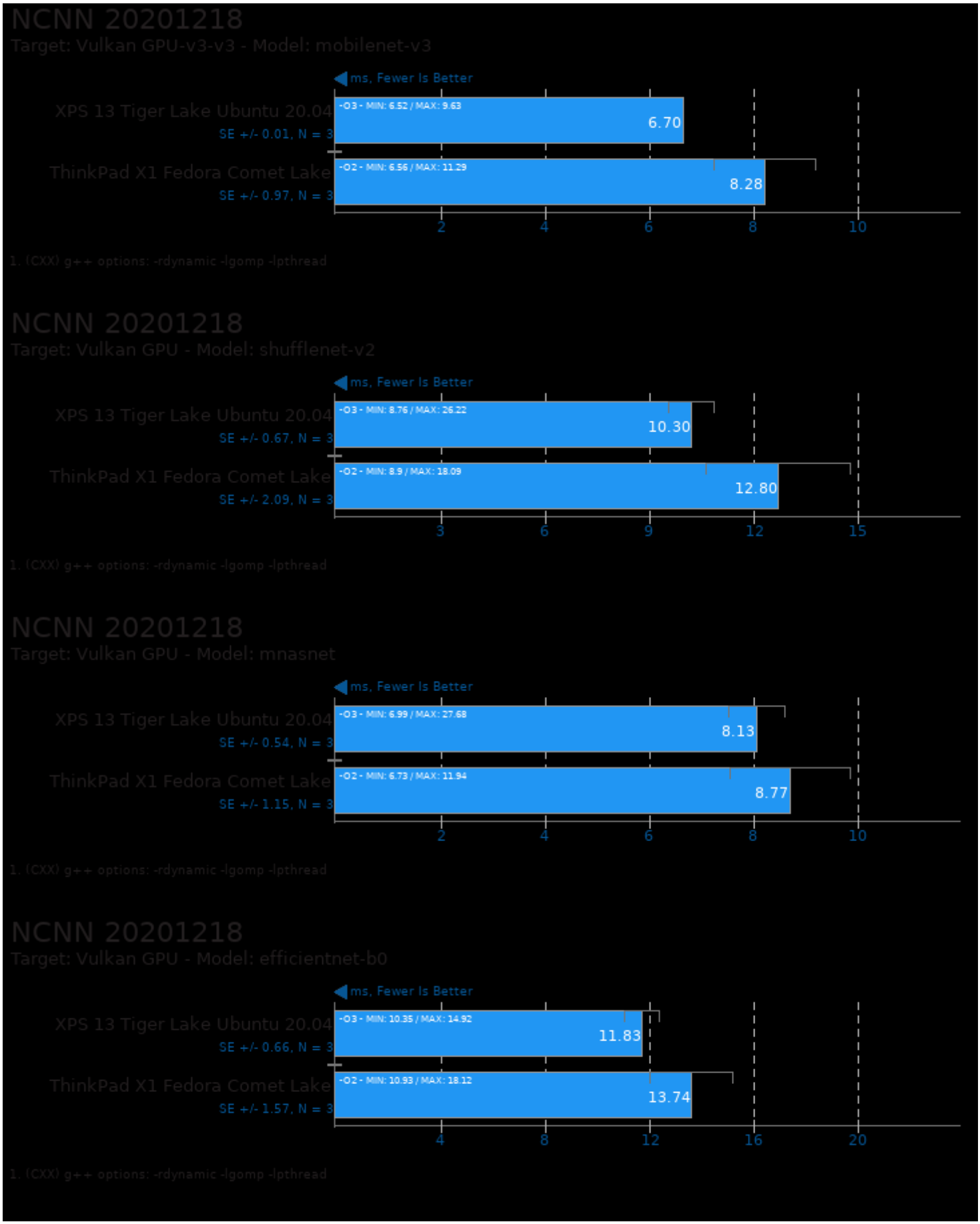

NCNN 20201218
Target: CPU - Model: efficientnet-b0
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.04, N = 3
-O3 - MIN: 12.32 / MAX: 31.52
12.53
ThinkPad X1 Fedora Comet Lake
SE +/- 0.51, N = 12
-O2 - MIN: 10.96 / MAX: 26.84
15.22
4
8
12
16
20
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: blazeface
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.02, N = 3
-O3 - MIN: 2.56 / MAX: 3.12
2.85
ThinkPad X1 Fedora Comet Lake
SE +/- 0.11, N = 12
-O2 - MIN: 3.13 / MAX: 13.74
3.80
0.855
1.71
2.565
3.42
4.275
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: googlenet
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.11, N = 3
-O3 - MIN: 23.82 / MAX: 51.99
25.01
ThinkPad X1 Fedora Comet Lake
SE +/- 0.89, N = 12
-O2 - MIN: 26.34 / MAX: 90.63
31.39
7
14
21
28
35
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: vgg16
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.25, N = 3
-O3 - MIN: 67.14 / MAX: 86.96
68.50
ThinkPad X1 Fedora Comet Lake
SE +/- 1.36, N = 12
-O2 - MIN: 101.54 / MAX: 1158.67
108.71
20
40
60
80
100
1. (CXX) g++ options: -rdynamic -lgomp -lpthread

Coder Radio XPS 13 ML Ubuntu Benchmark



Coder Radio XPS 13 ML Ubuntu Benchmark

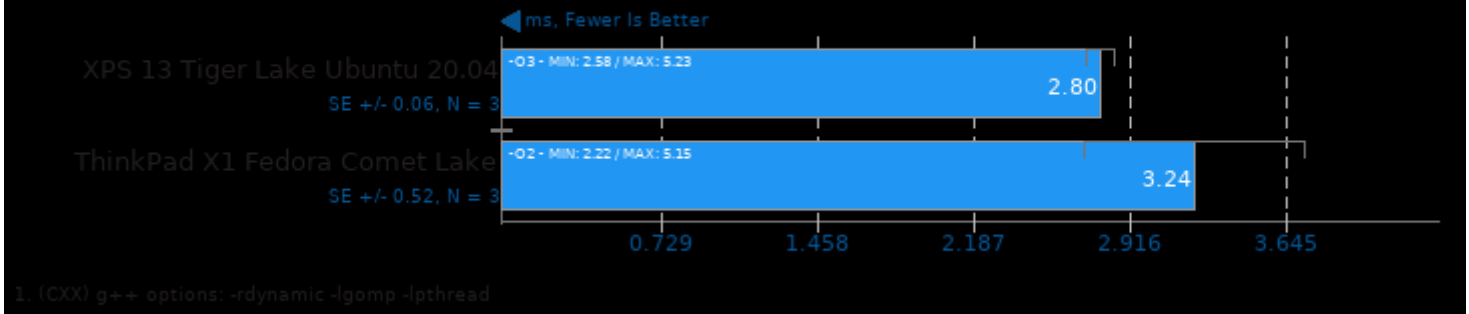



NCNN 20201218
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.01, N = 3
-O3 - MIN: 6.52 / MAX: 9.63
6.70
ThinkPad X1 Fedora Comet Lake
SE +/- 0.97, N = 3
-O2 - MIN: 6.56 / MAX: 11.29
8.28
2
4
6
8
10
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: shufflenet-v2
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.67, N = 3
-O3 - MIN: 8.76 / MAX: 26.22
10.30
ThinkPad X1 Fedora Comet Lake
SE +/- 2.09, N = 3
-O2 - MIN: 8.9 / MAX: 18.09
12.80
3
6
9
12
15
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: mnasnet
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.54, N = 3
-O3 - MIN: 6.99 / MAX: 27.68
8.13
ThinkPad X1 Fedora Comet Lake
SE +/- 1.15, N = 3
-O2 - MIN: 6.73 / MAX: 11.94
8.77
2
4
6
8
10
1. (CXX) g++ options: -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: efficientnet-b0
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.66, N = 3
-O3 - MIN: 10.35 / MAX: 14.92
11.83
ThinkPad X1 Fedora Comet Lake
SE +/- 1.57, N = 3
-O2 - MIN: 10.93 / MAX: 18.12
13.74
4
8
12
16
20
1. (CXX) g++ options: -rdynamic -lgomp -lpthread

Coder Radio XPS 13 ML Ubuntu Benchmark

NCNN 20201218

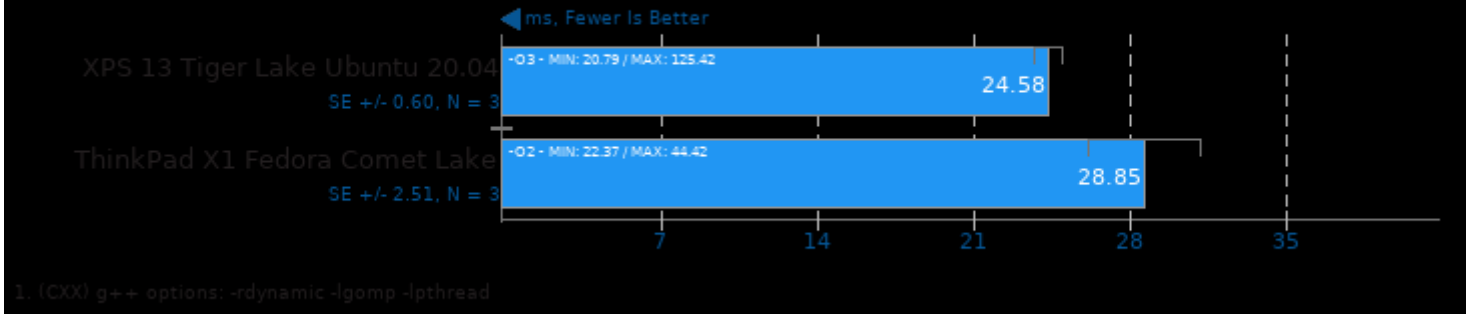
Target: Vulkan GPU - Model: blazeface



1. (CXX) g++ options: -rdynamic -lgomp -lpthread

NCNN 20201218

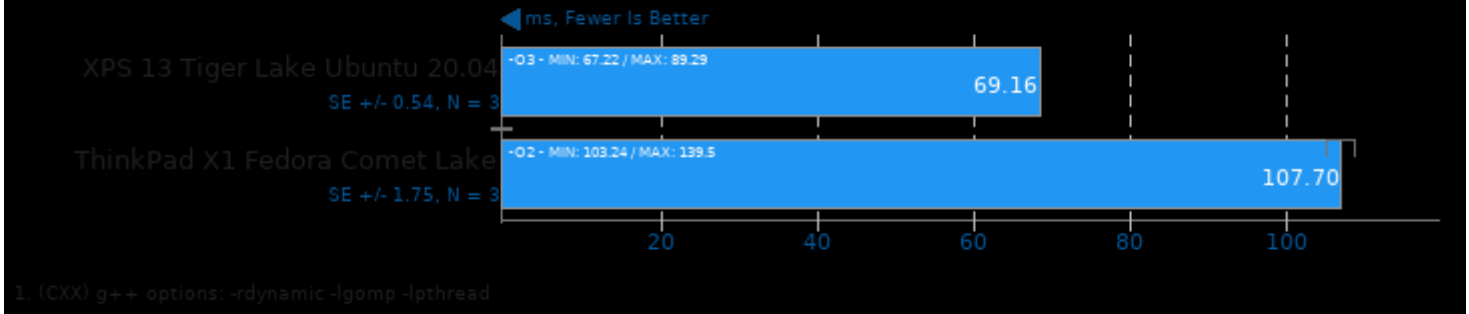
Target: Vulkan GPU - Model: googlenet



1. (CXX) g++ options: -rdynamic -lgomp -lpthread

NCNN 20201218

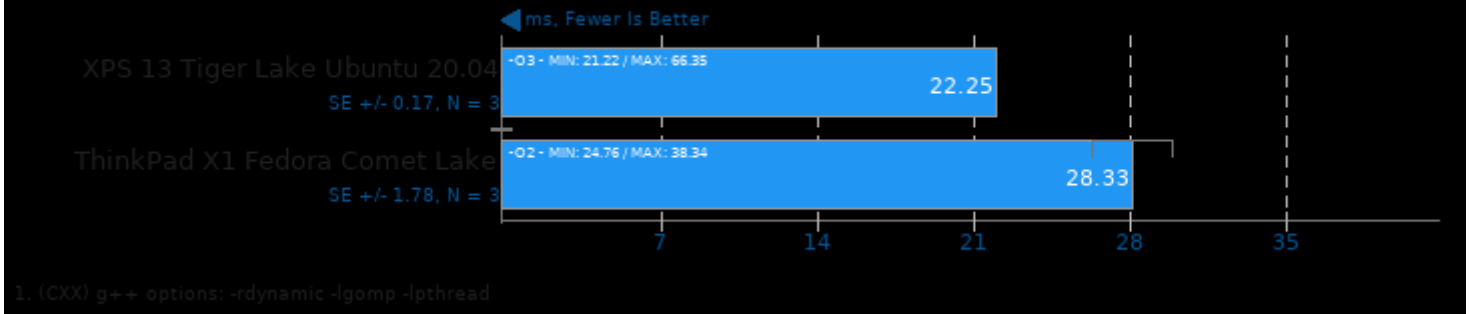
Target: Vulkan GPU - Model: vgg16



1. (CXX) g++ options: -rdynamic -lgomp -lpthread

NCNN 20201218

Target: Vulkan GPU - Model: resnet18

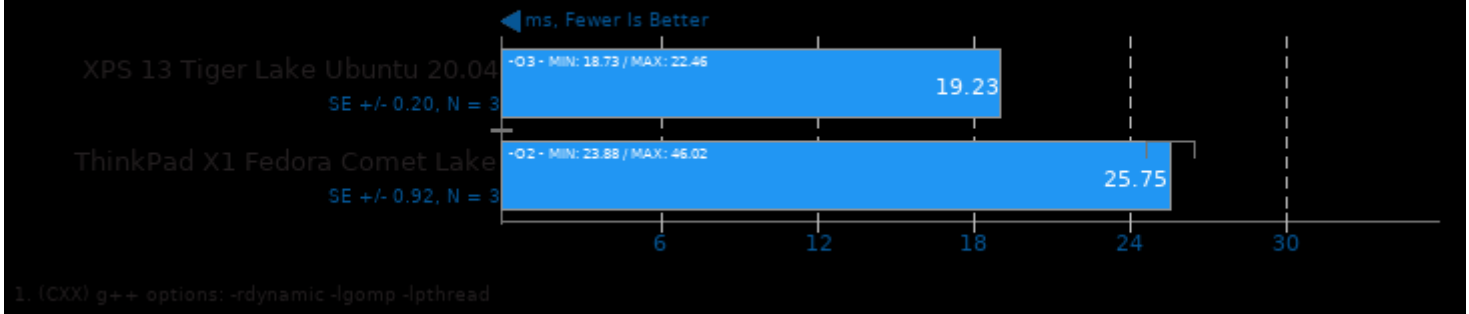


1. (CXX) g++ options: -rdynamic -lgomp -lpthread

Coder Radio XPS 13 ML Ubuntu Benchmark

NCNN 20201218

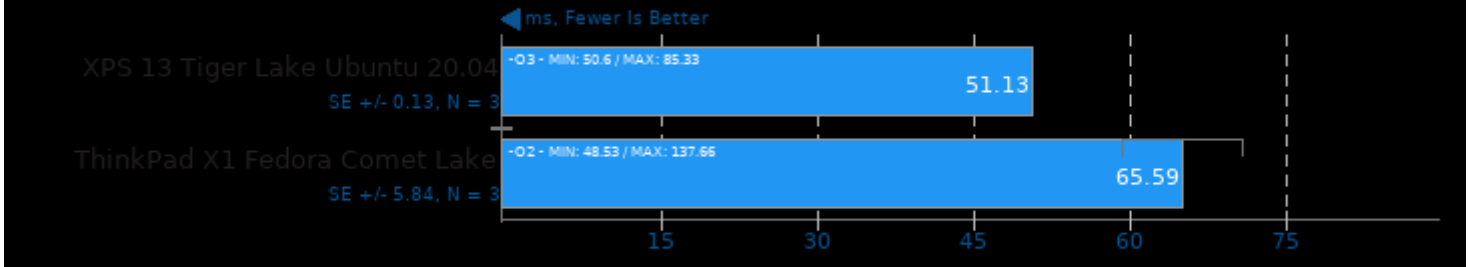
Target: Vulkan GPU - Model: alexnet



1. (CXX) g++ options: -rdynamic -lgomp -lpthread

NCNN 20201218

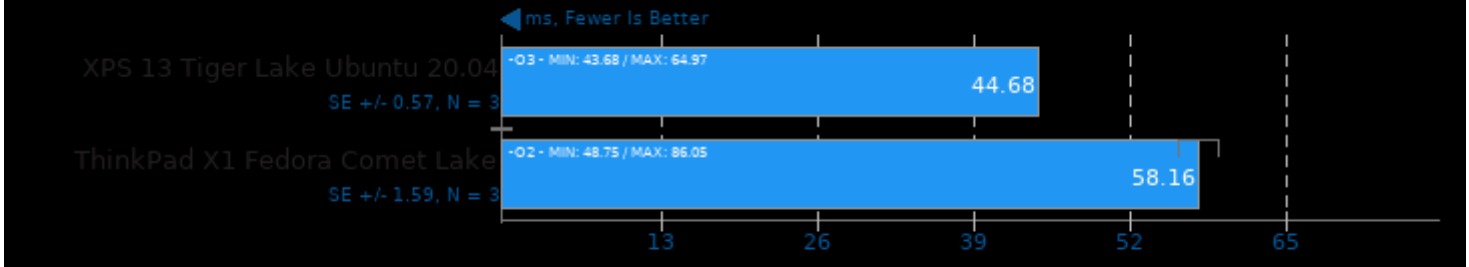
Target: Vulkan GPU - Model: resnet50



1. (CXX) g++ options: -rdynamic -lgomp -lpthread

NCNN 20201218

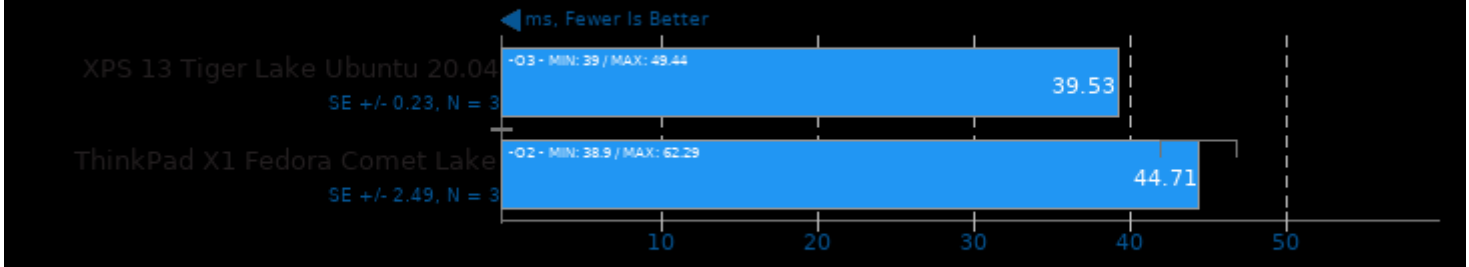
Target: Vulkan GPU - Model: yolov4-tiny



1. (CXX) g++ options: -rdynamic -lgomp -lpthread

NCNN 20201218

Target: Vulkan GPU - Model: squeezenet_ssd

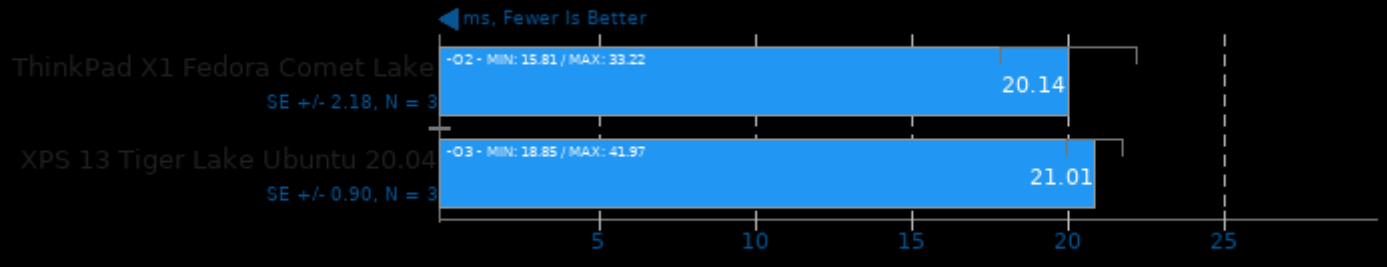


1. (CXX) g++ options: -rdynamic -lgomp -lpthread

Coder Radio XPS 13 ML Ubuntu Benchmark

NCNN 20201218

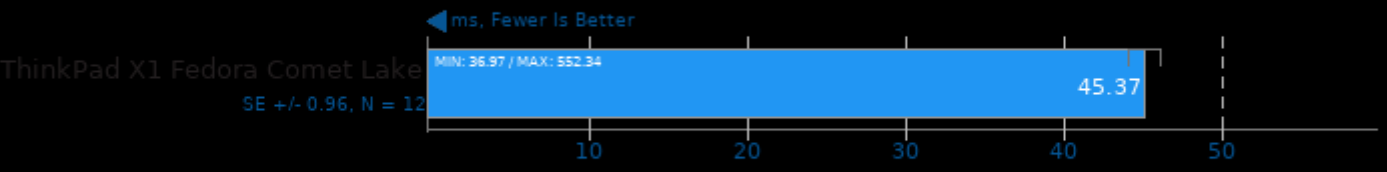
Target: Vulkan GPU - Model: regnety_400m



1. (CXX) g++ options: -rdynamic -lgomp -lpthread

NCNN 20201218

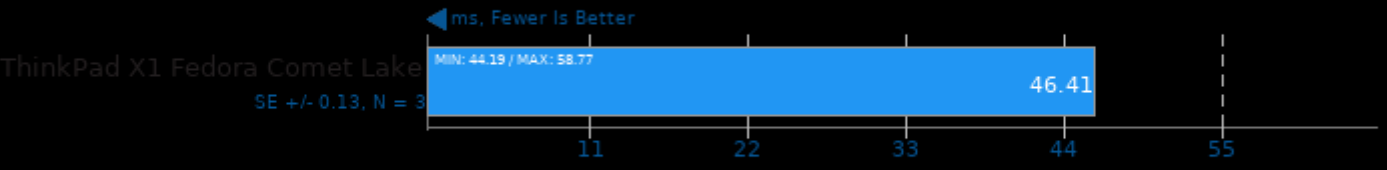
Target: CPUv2-yolov3v2-yolov3 - Model: mobilenetv2-yolov3



1. (CXX) g++ options: -O2 -rdynamic -lgomp -lpthread

NCNN 20201218

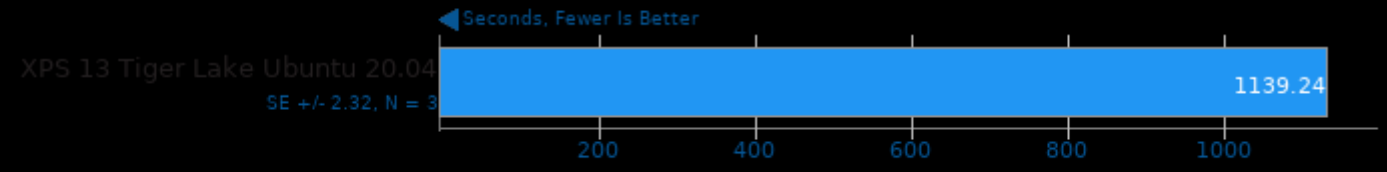
Target: Vulkan GPUv2-yolov3v2-yolov3 - Model: mobilenetv2-yolov3



1. (CXX) g++ options: -O2 -rdynamic -lgomp -lpthread

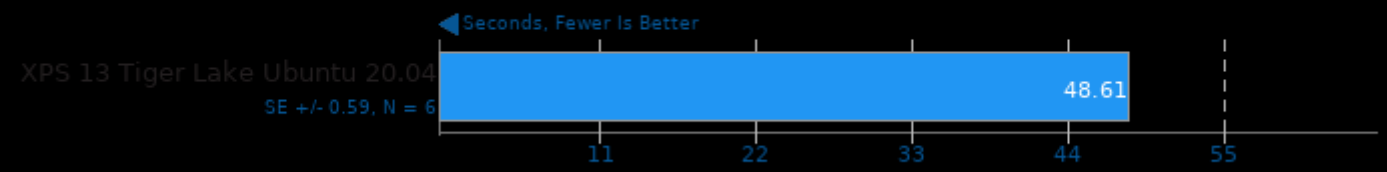
Numenta Anomaly Benchmark 1.1

Detector: EXPoSE

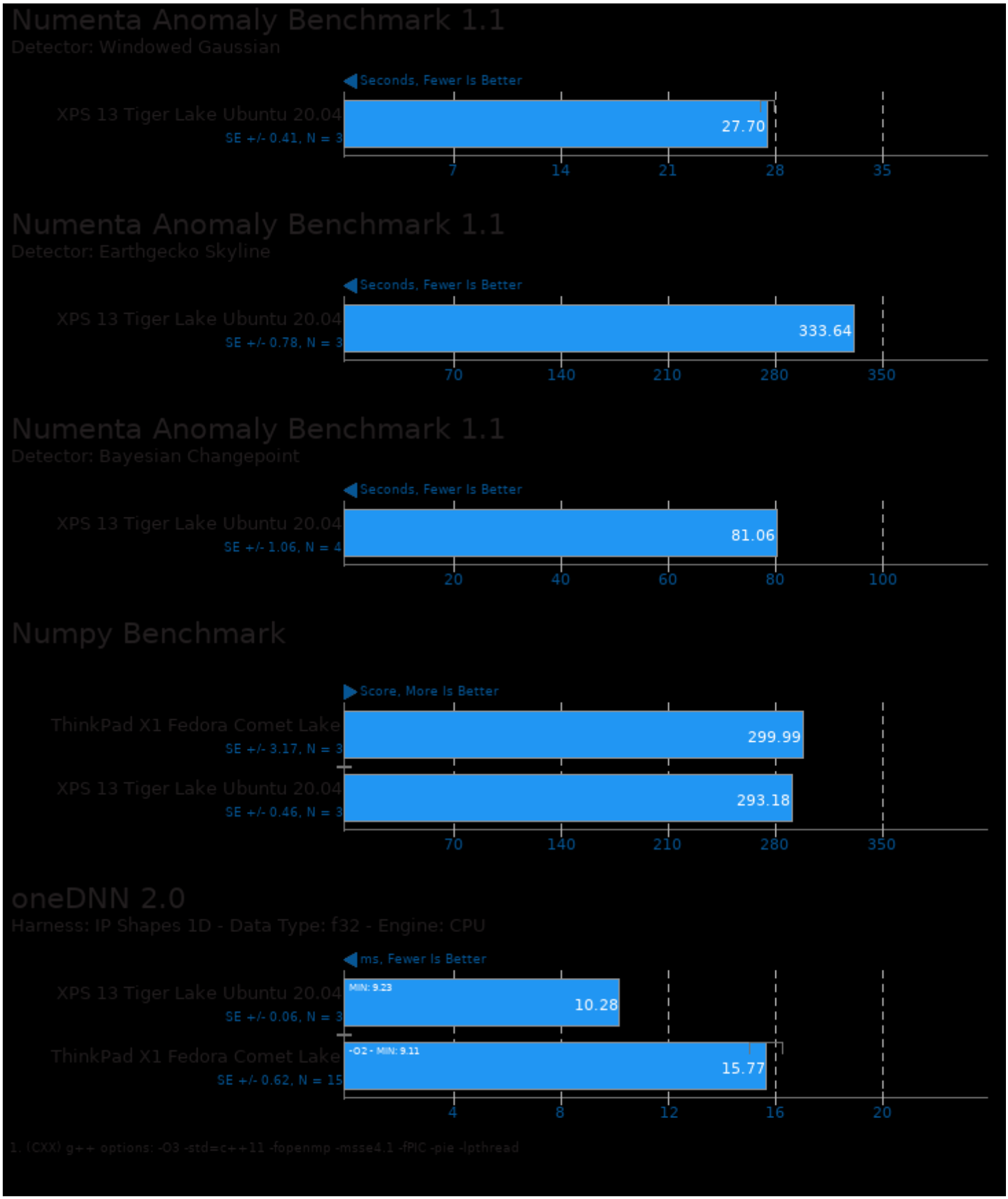


Numenta Anomaly Benchmark 1.1

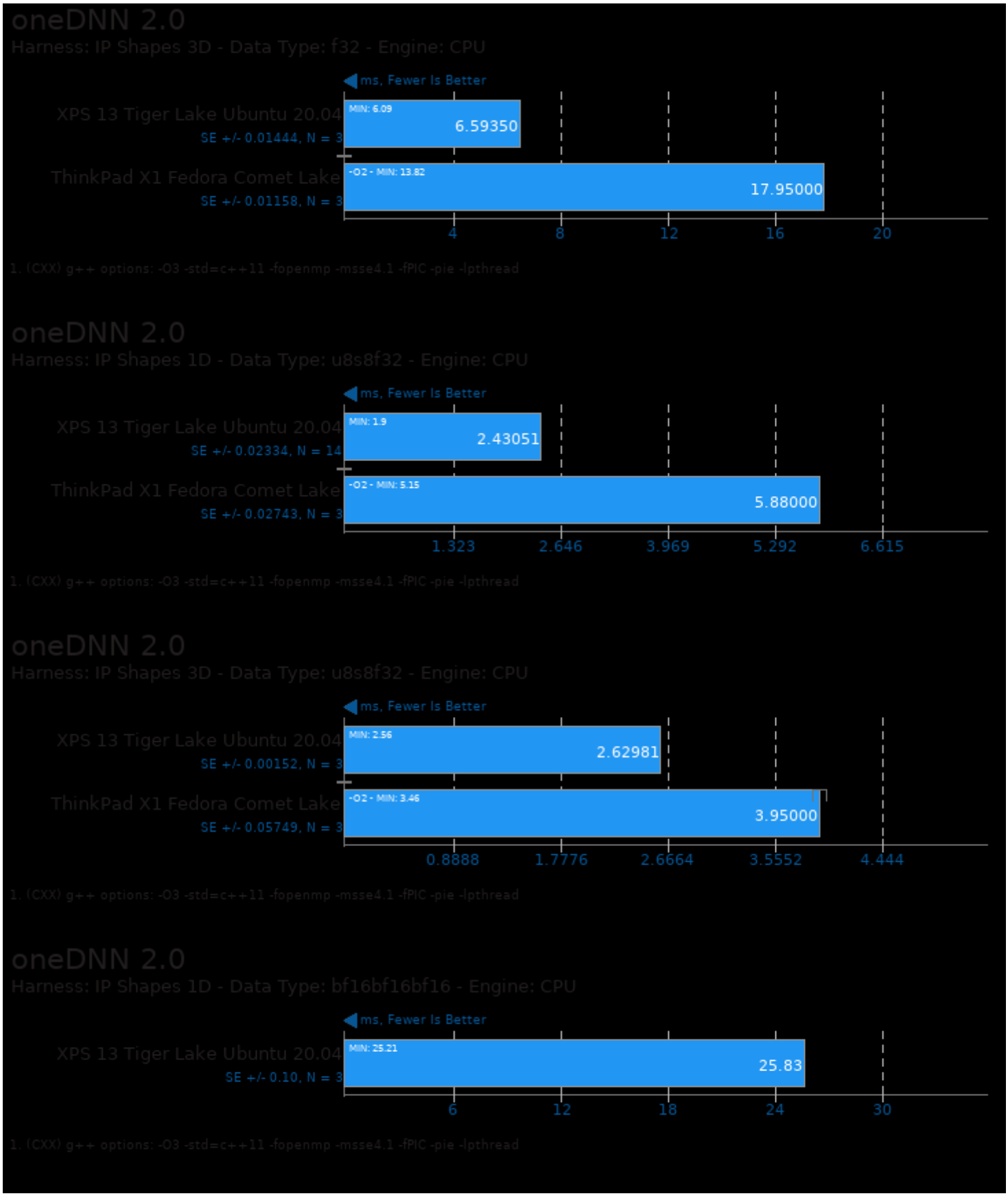
Detector: Relative Entropy



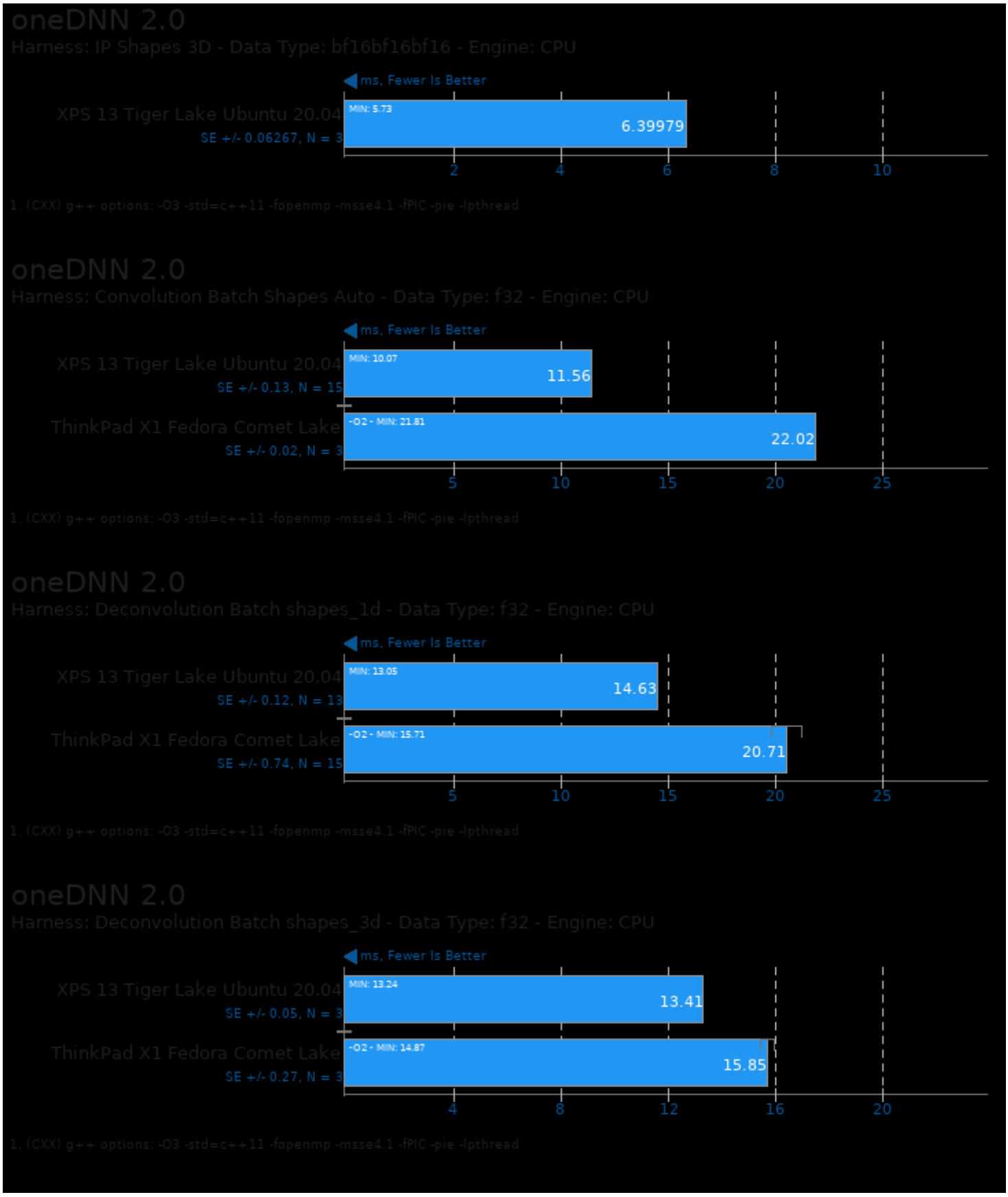
Coder Radio XPS 13 ML Ubuntu Benchmark

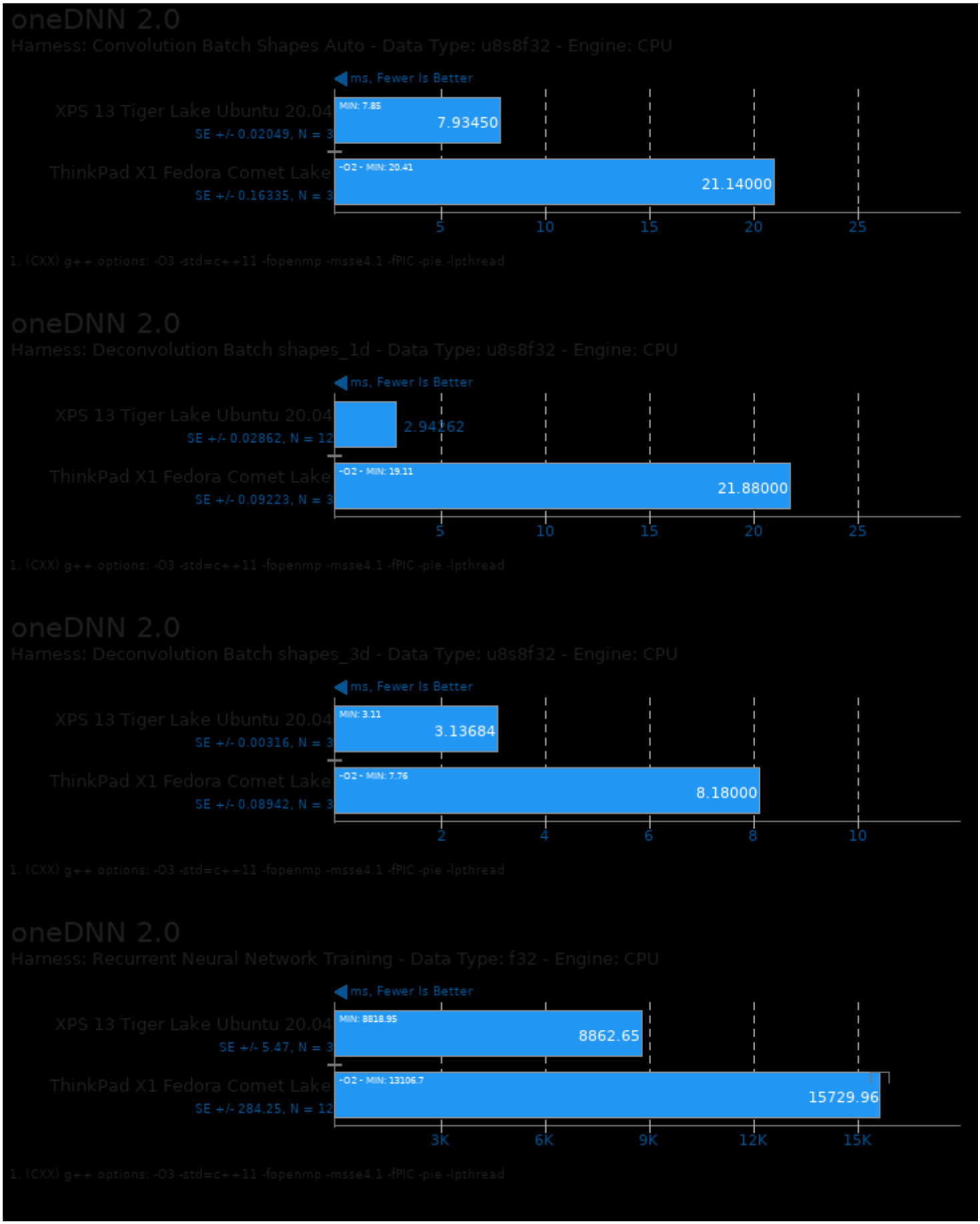


Coder Radio XPS 13 ML Ubuntu Benchmark

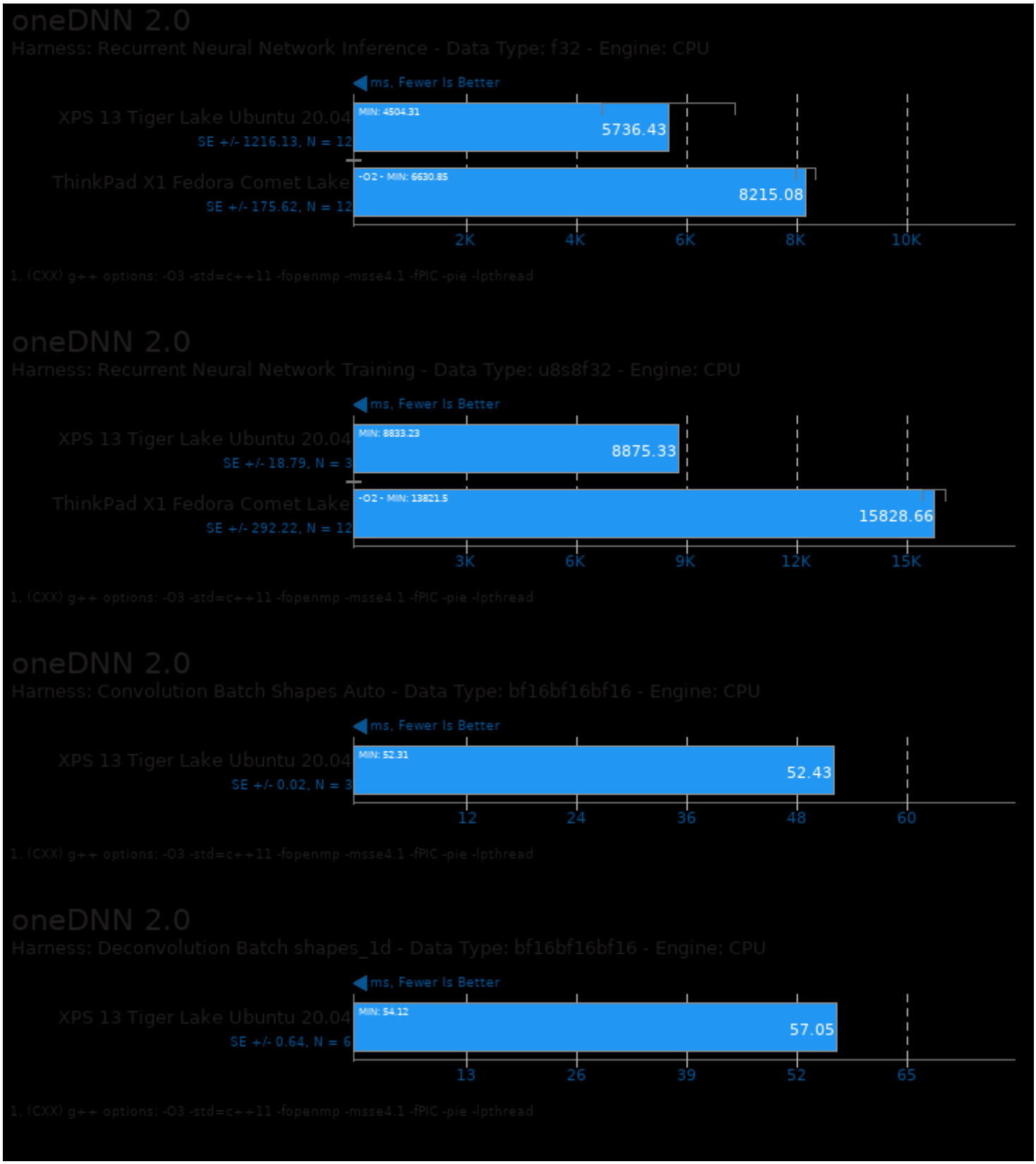


Coder Radio XPS 13 ML Ubuntu Benchmark

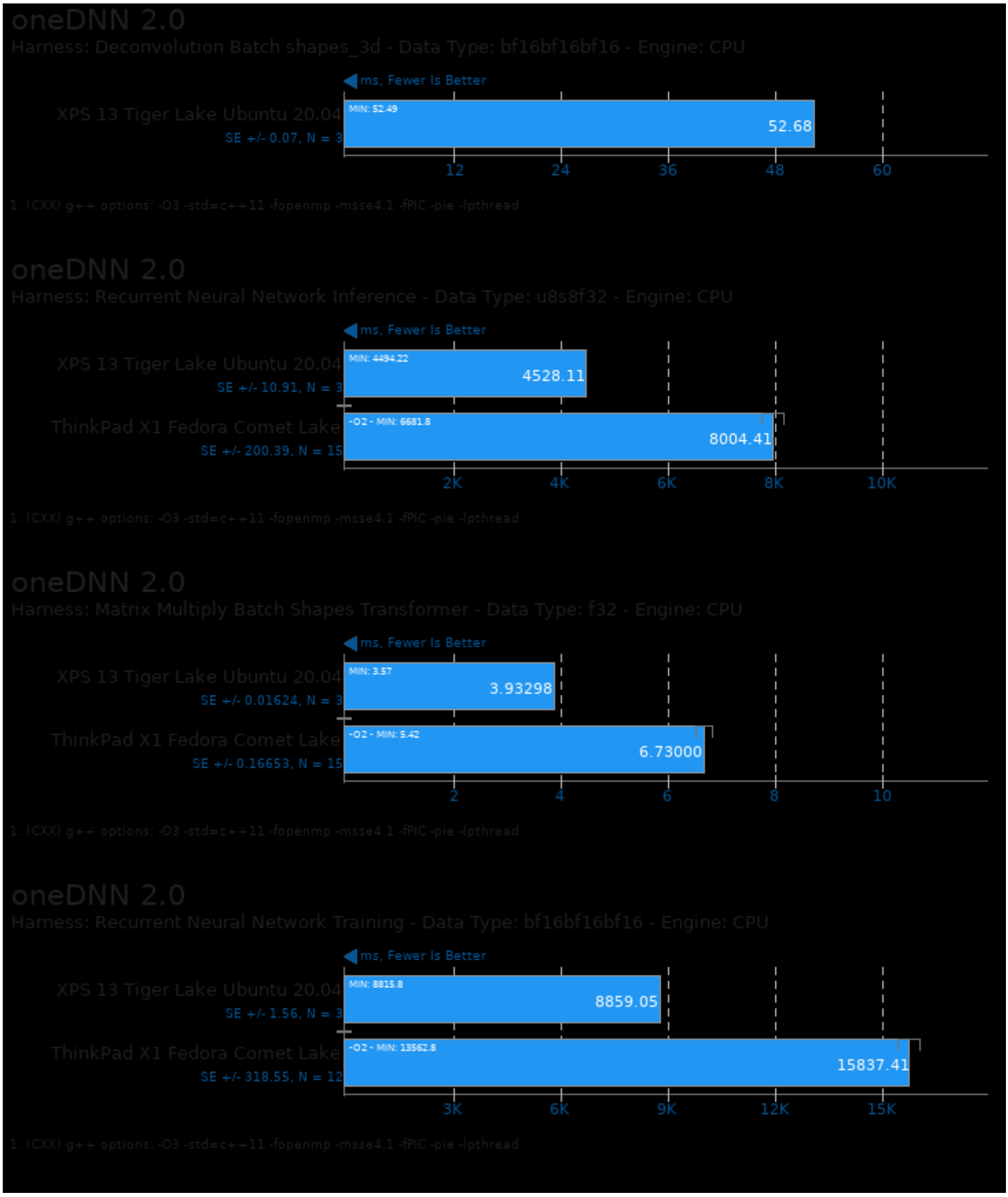



oneDNN 2.0
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.02049, N = 3
MIN: 7.85
7.93450
ThinkPad X1 Fedora Comet Lake
SE +/- 0.16335, N = 3
-O2 - MIN: 20.41
21.14000
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.02862, N = 12
2.94162
ThinkPad X1 Fedora Comet Lake
SE +/- 0.09223, N = 3
-O2 - MIN: 19.11
21.88000
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 0.00316, N = 3
MIN: 3.11
3.13684
ThinkPad X1 Fedora Comet Lake
SE +/- 0.08942, N = 3
-O2 - MIN: 7.76
8.18000
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
XPS 13 Tiger Lake Ubuntu 20.04
SE +/- 5.47, N = 3
MIN: 8818.95
8862.65
ThinkPad X1 Fedora Comet Lake
SE +/- 284.25, N = 12
-O2 - MIN: 13106.7
15729.96
3K
6K
9K
12K
15K
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

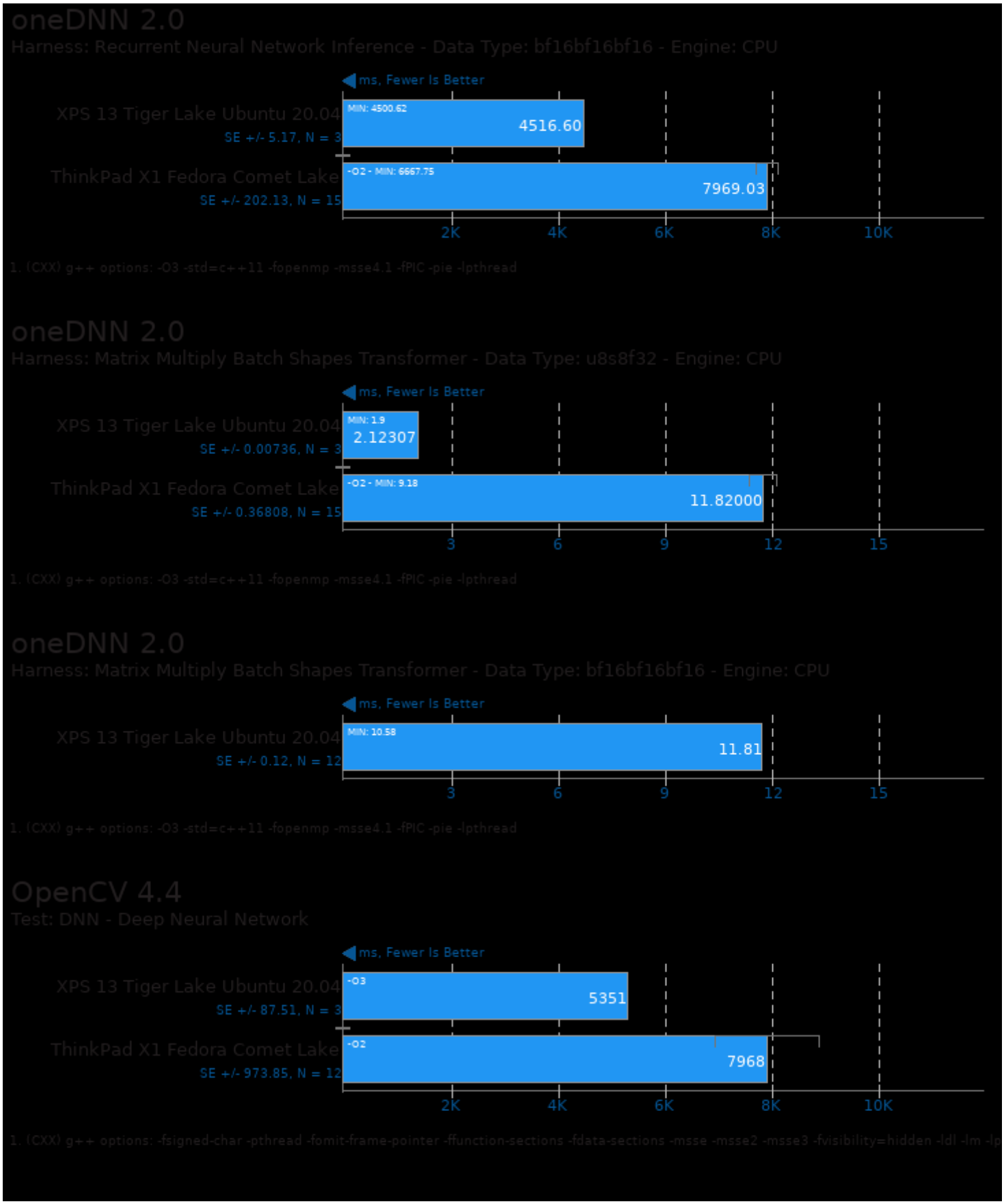
Coder Radio XPS 13 ML Ubuntu Benchmark



Coder Radio XPS 13 ML Ubuntu Benchmark



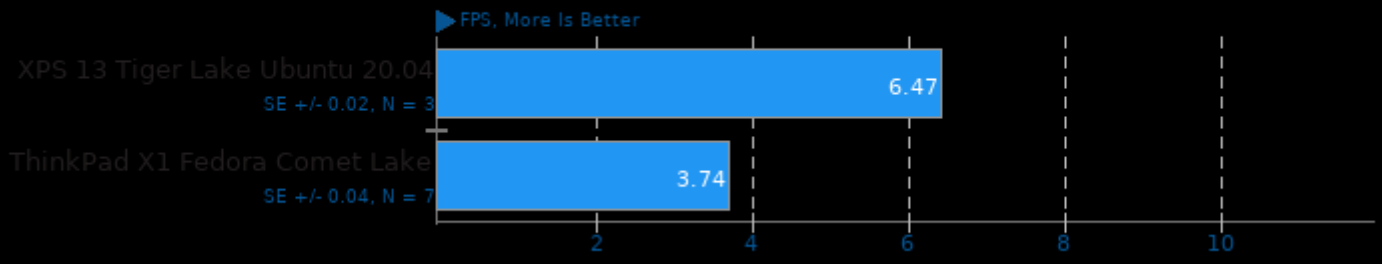
Coder Radio XPS 13 ML Ubuntu Benchmark



Coder Radio XPS 13 ML Ubuntu Benchmark

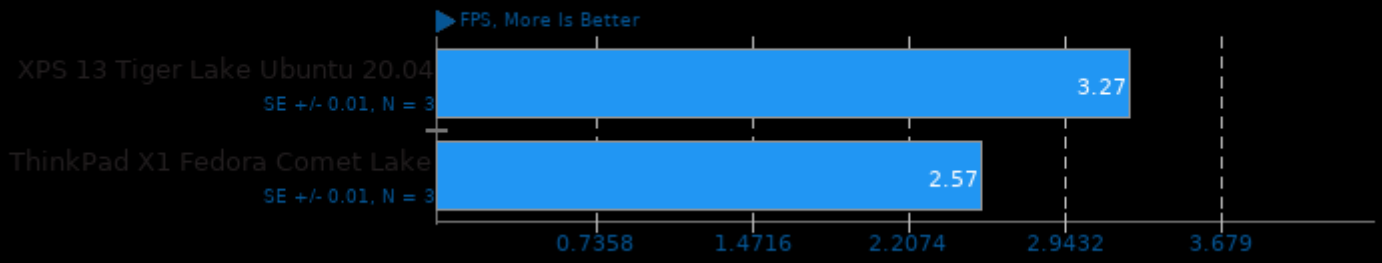
PlaidML

FP16: No - Mode: Inference - Network: VGG16 - Device: CPU

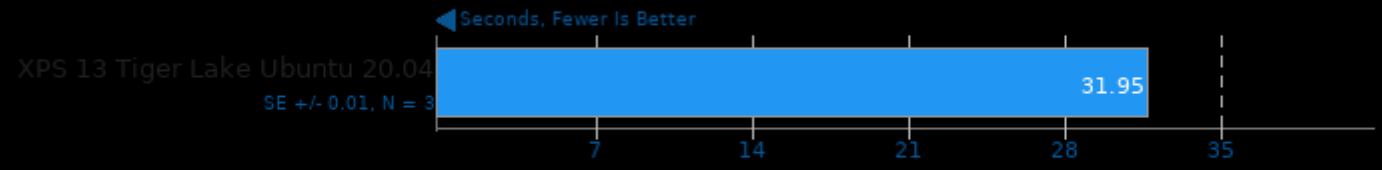


PlaidML

FP16: No - Mode: Inference - Network: ResNet 50 - Device: CPU

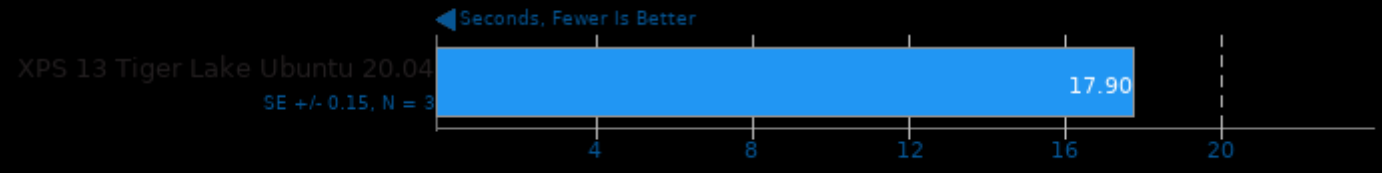


RNNoise 2020-06-28



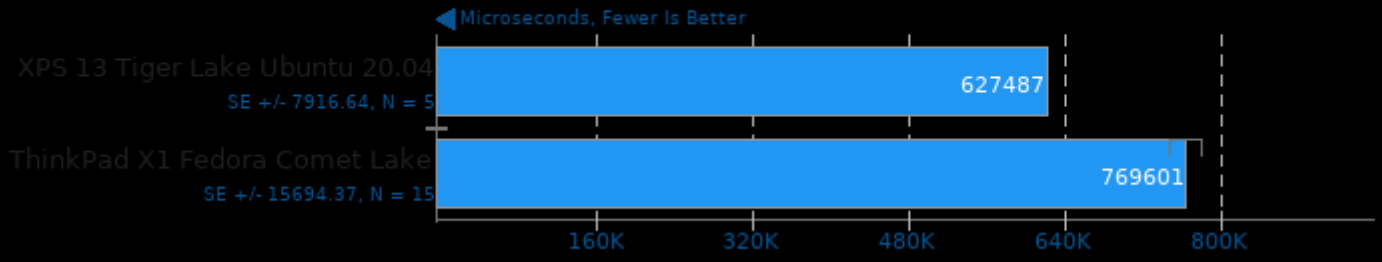
1. (CC) gcc options: -O2 -pedantic -fvisibility=hidden

Scikit-Learn 0.22.1

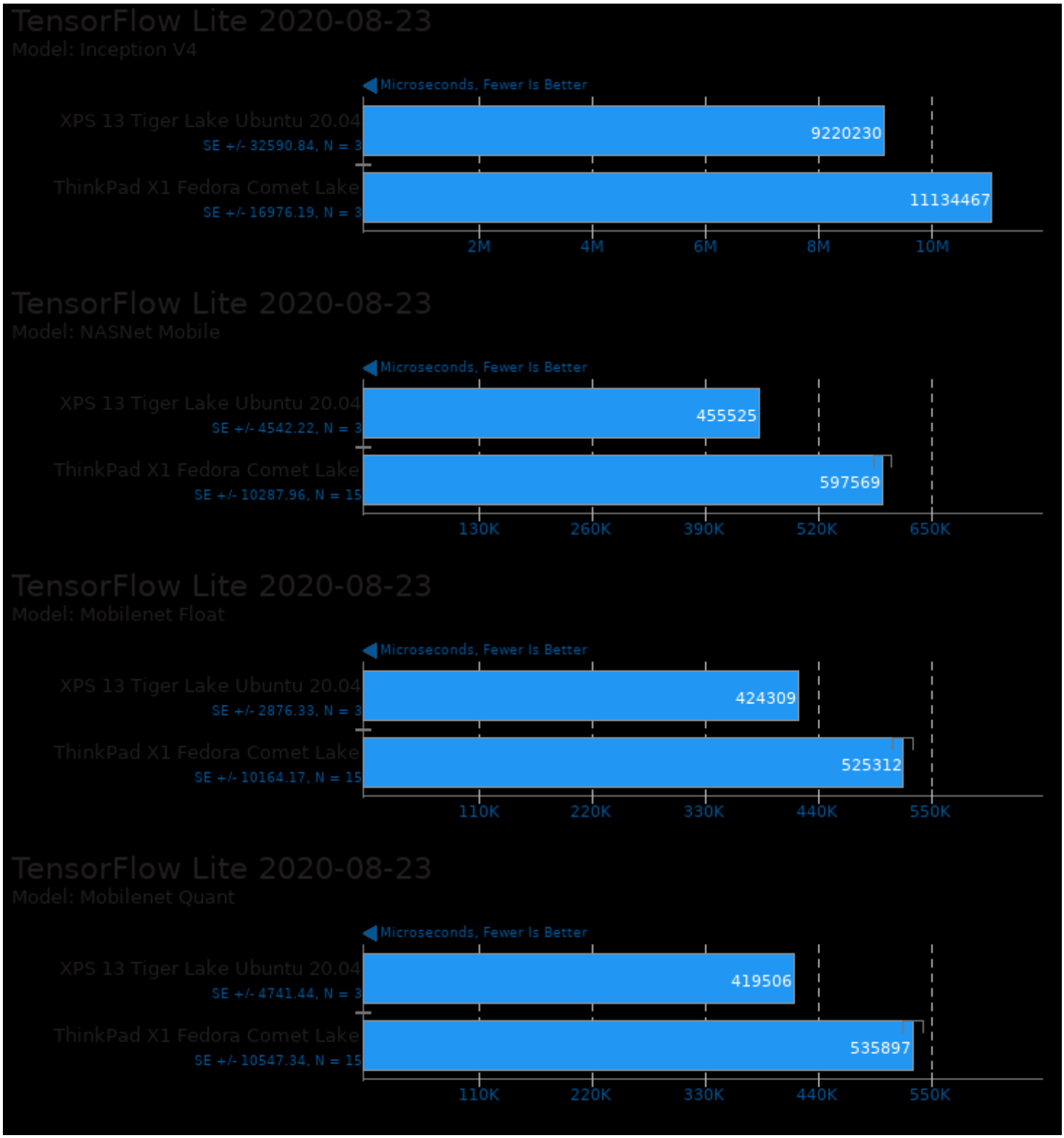


TensorFlow Lite 2020-08-23

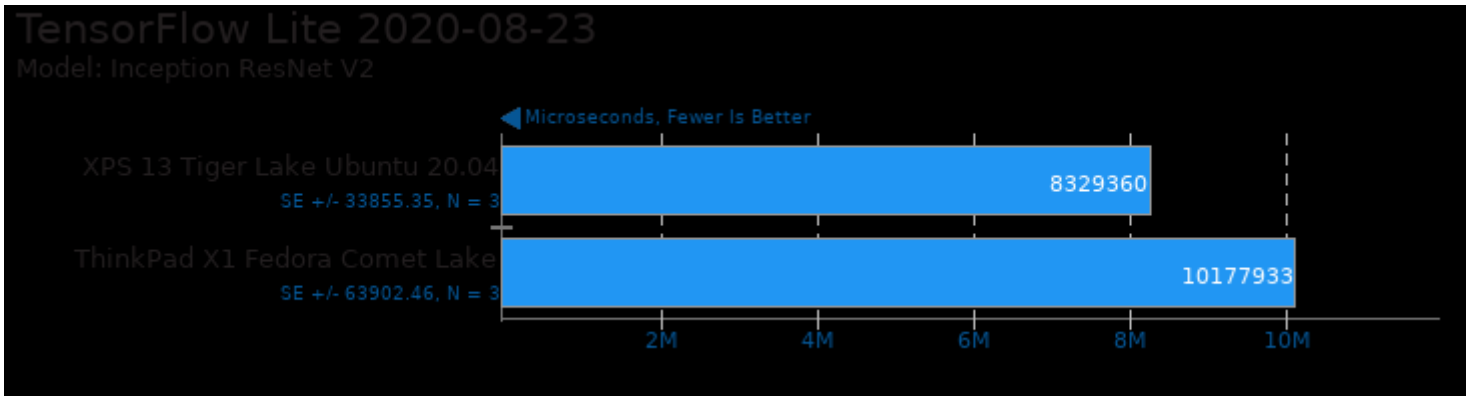
Model: SqueezeNet



Coder Radio XPS 13 ML Ubuntu Benchmark

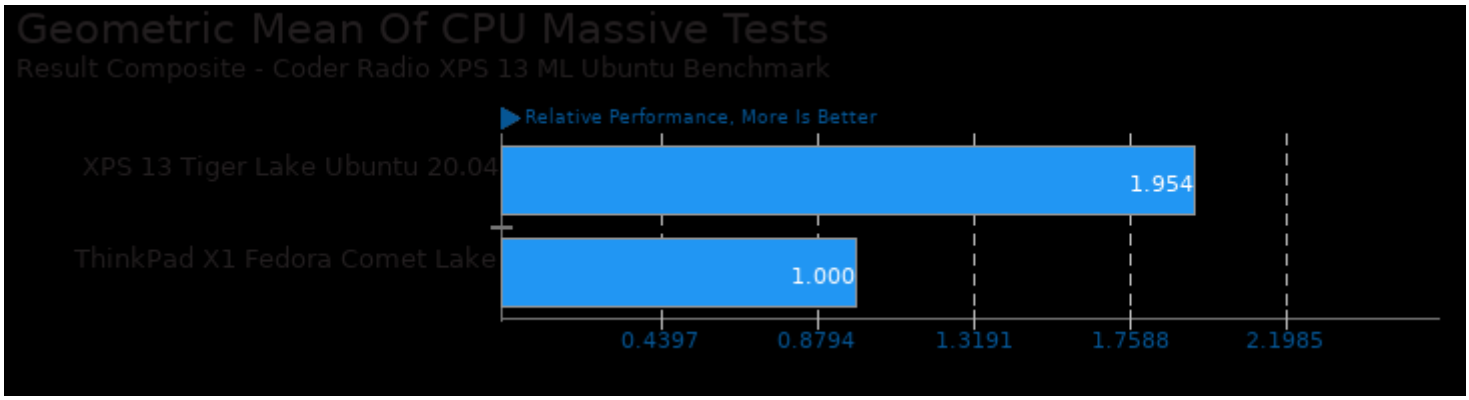


Coder Radio XPS 13 ML Ubuntu Benchmark

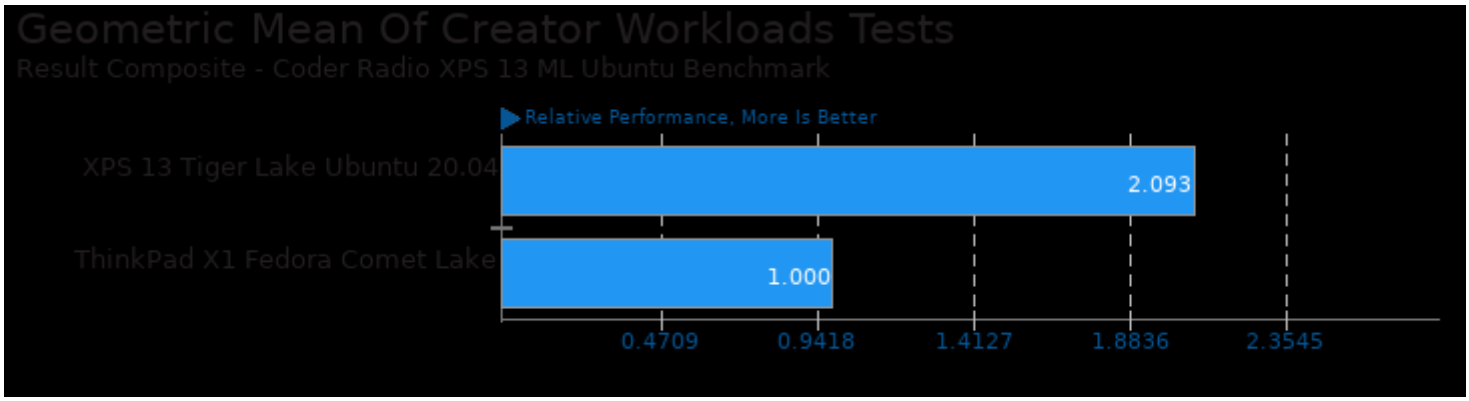


Coder Radio XPS 13 ML Ubuntu Benchmark

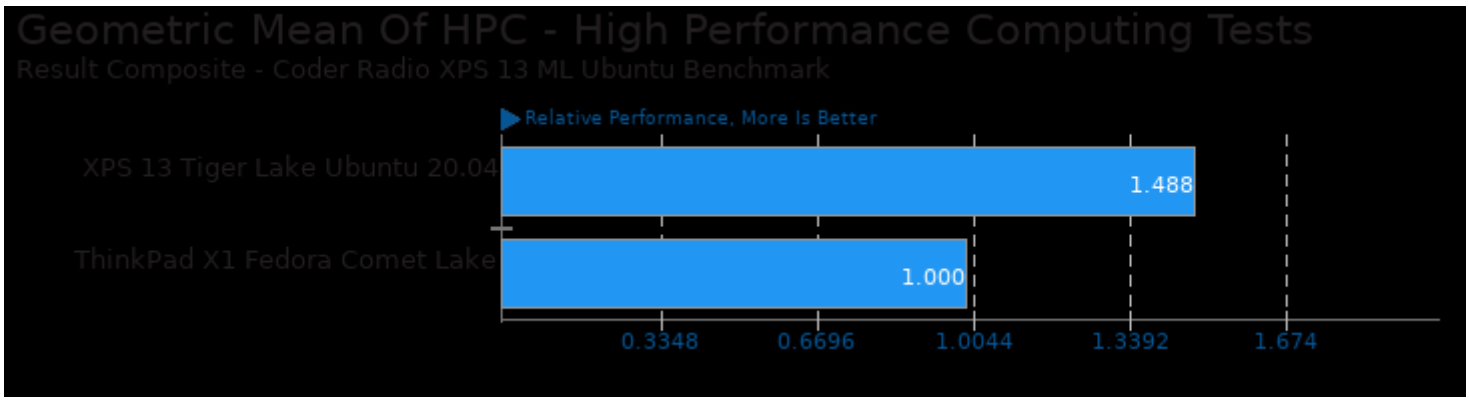
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/onednn, pts/numenta-nab, pts/numpy, pts/plaidml and pts/scikit-learn

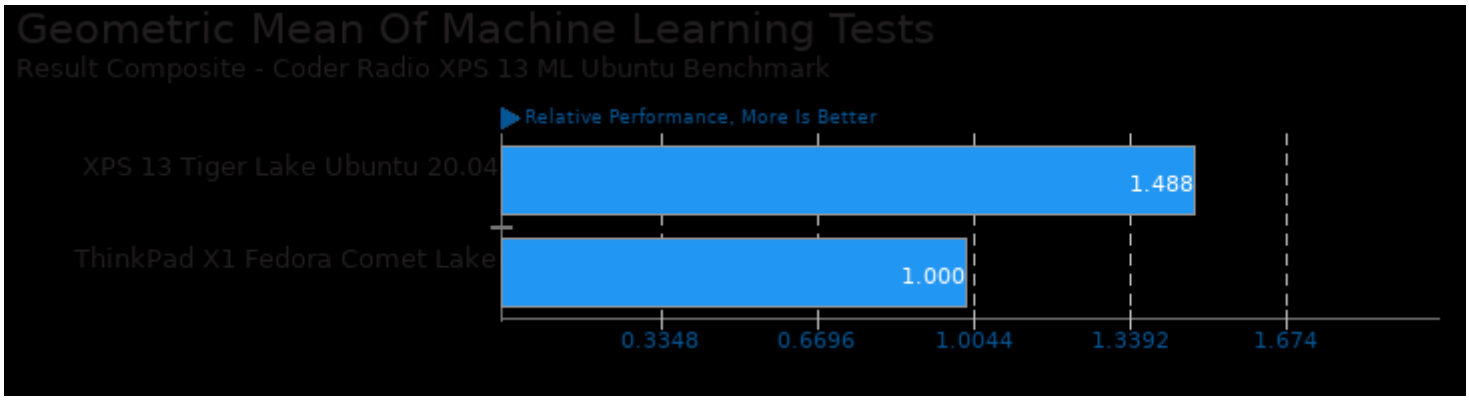


Geometric mean based upon tests: pts/onednn and pts/rnnoise

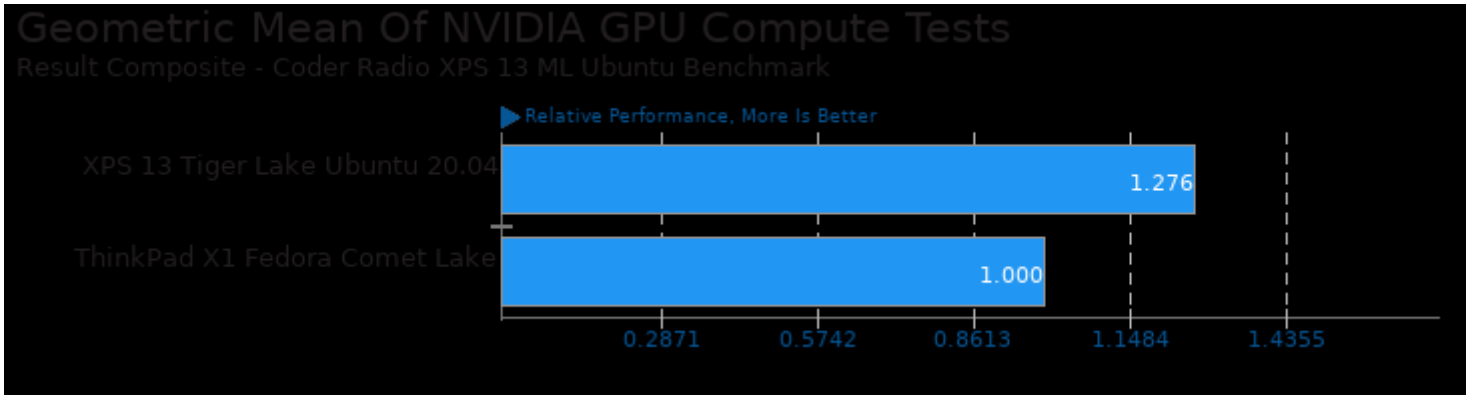


Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/opencv, pts/numpy, pts/ai-benchmark, pts/rnnoise, pts/scikit-learn, pts/mlpack, pts/numenta-nab, pts/tensorflow-lite, pts/onednn and pts/plaidml

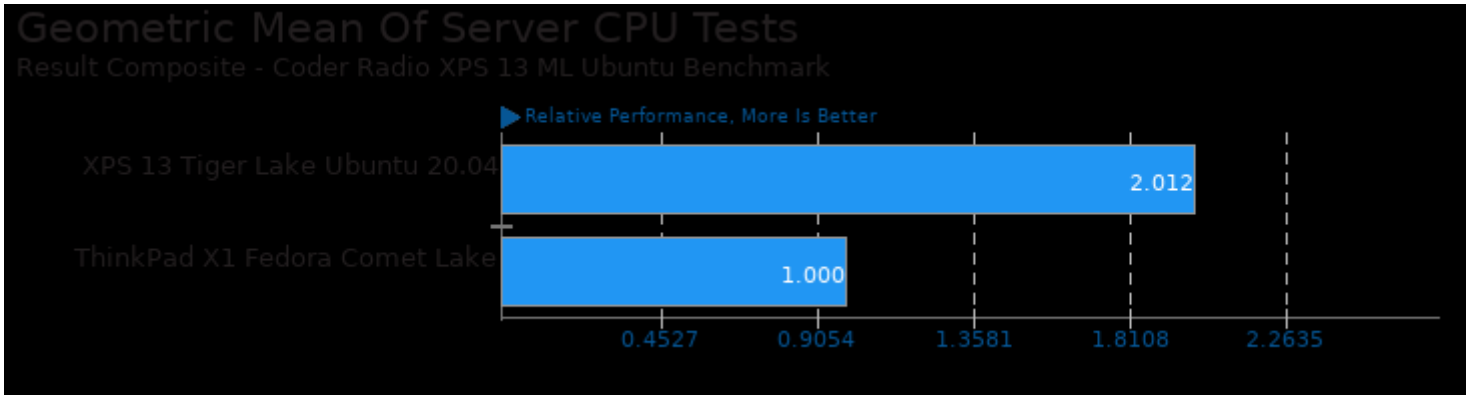
Coder Radio XPS 13 ML Ubuntu Benchmark



Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/opencv, pts/numpy, pts/ai-benchmark, pts/rnnoise, pts/scikit-learn, pts/mlpack, pts/numenta-nab, pts/tensorflow-lite, pts/onednn and pts/plaidml



Geometric mean based upon tests: pts/plaidml and pts/ncnn



Geometric mean based upon tests: pts/onednn, pts/numpy, pts/numenta-nab and pts/scikit-learn

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 09:06.