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AMD Ryzen Threadripper 3990X 64-Core testing with a Gigabyte TRX40 AORUS PRO WIFI (F4p BIOS) and AMD Radeon RX 5700 8GB on Pop 22.04 via the Phoronix Test Suite.

Automated Executive Summary

A had the most wins, coming in first place for 38% of the tests.

Based on the geometric mean of all complete results, the fastest (A) was 1x the speed of the slowest (A). B was 1x the speed of C and A was 1x the speed of B.

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

TensorFlow Lite (Model: Inception ResNet V2) at 1.046x
TensorFlow Lite (Model: Mobilenet Float) at 1.042x
Renaissance (Test: Scala Dotty) at 1.032x
Renaissance (Test: Akka Unbalanced Cobwebbed Tree) at 1.03x
TensorFlow Lite (Model: Mobilenet Quant) at 1.023x
TensorFlow Lite (Model: NASNet Mobile) at 1.022x
Renaissance (Test: In-Memory Database Shootout) at 1.017x
Renaissance (Test: Savina Reactors.IO) at 1.016x
Renaissance (Test: Apache Spark PageRank) at 1.016x

TensorFlow Lite (Model: SqueezeNet) at 1.009x.

Test Systems:

A

B

C

Processor: AMD Ryzen Threadripper 3990X 64-Core @ 2.90GHz (64 Cores / 128 Threads), Motherboard: Gigabyte TRX40 AORUS PRO WIFI (F4p BIOS), Chipset: AMD Starship/Matisse, Memory: 128GB, Disk: Samsung SSD 970 EVO Plus 500GB, Graphics: AMD Radeon RX 5700 8GB (1750/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: DELL P2415Q, Network: Intel I211 + Intel Wi-Fi 6 AX200

OS: Pop 22.04, Kernel: 5.17.5-76051705-generic (x86_64), Desktop: GNOME Shell 42.0, Display Server: X Server 1.21.1.3, OpenGL: 4.6 Mesa 22.0.1 (LLVM 13.0.1 DRM 3.44), Vulkan: 1.2.204, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

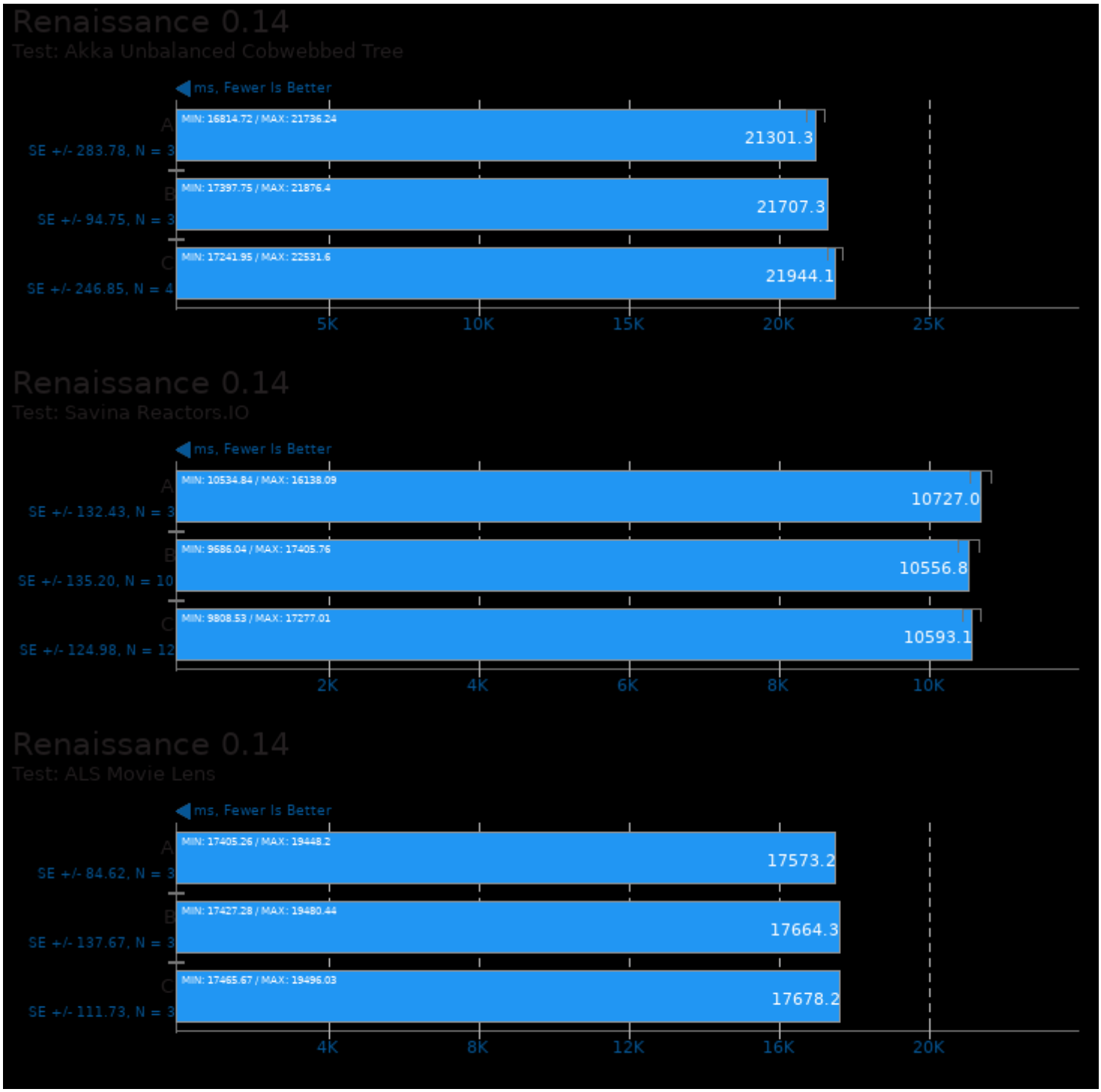
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0x8301039
Java Notes: OpenJDK Runtime Environment (build 11.0.15+10-Ubuntu-0ubuntu0.22.04.1)
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + 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: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	A	B	C
Renaissance - A.U.C.T (ms)	**21301**	21707	**21944**
Normalized	100%	98.13%	97.07%
Standard Deviation	2.3%	0.8%	2.2%
Renaissance - Savina Reactors.IO (ms)	**10727**	**10557**	10593
Normalized	98.41%	100%	99.66%
Standard Deviation	2.1%	4%	4.1%
Renaissance - ALS Movie Lens (ms)	**17573**	17664	**17678**
Normalized	100%	99.48%	99.41%
Standard Deviation	0.8%	1.3%	1.1%
TensorFlow Lite - Inception V4 (us)	**56637**	56755	**56977**
Normalized	100%	99.79%	99.4%
Standard Deviation	3.7%	3.5%	3.8%
Renaissance - G.A.U.J.F (ms)	3326	**3332**	**3312**

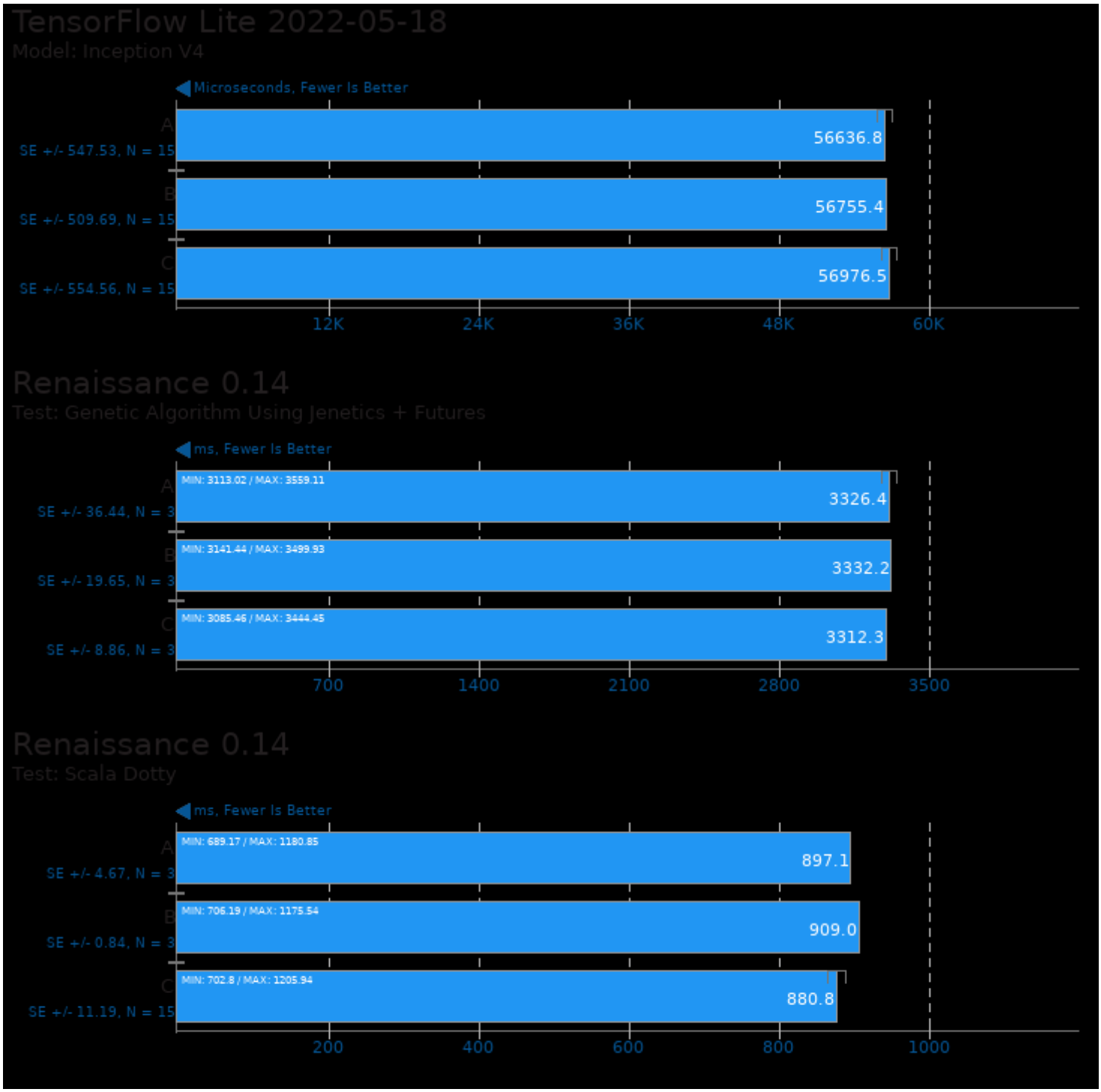
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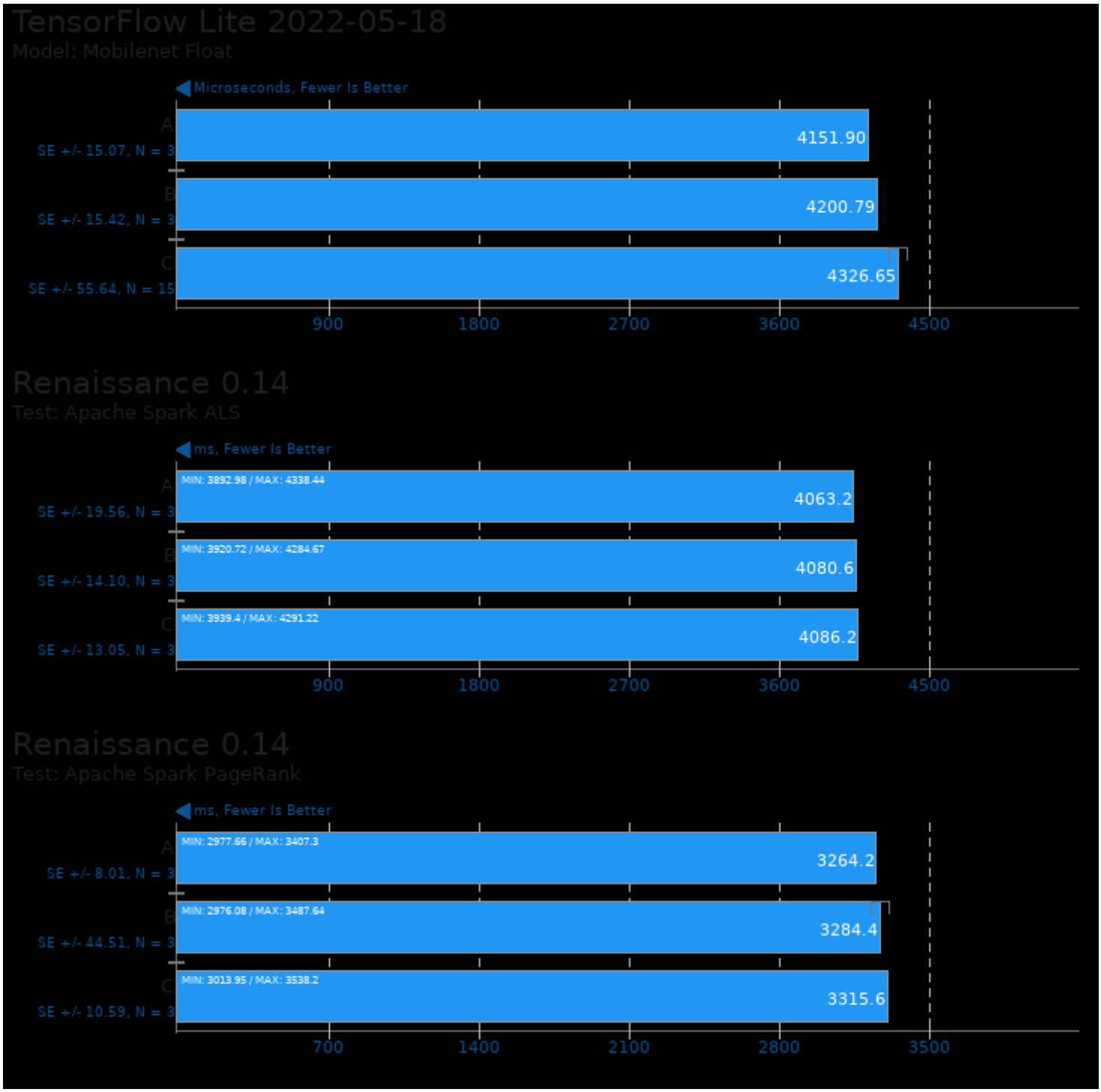
Normalized	99.58%	99.4%	100%
Standard Deviation	1.9%	1%	0.5%
Renaissance - Scala Dotty (ms)	897.1	**909.0**	**880.8**
Normalized	98.18%	96.9%	100%
Standard Deviation	0.9%	0.2%	4.9%
TensorFlow Lite - Mobilenet Float (us)	**4152**	4201	**4327**
Normalized	100%	98.84%	95.96%
Standard Deviation	0.6%	0.6%	5%
Renaissance - Apache Spark ALS (ms)	**4063**	4081	**4086**
Normalized	100%	99.57%	99.44%
Standard Deviation	0.8%	0.6%	0.6%
Renaissance - A.S.P (ms)	**3264**	3284	**3316**
Normalized	100%	99.38%	98.45%
Standard Deviation	0.4%	2.3%	0.6%
Renaissance - I.M.D.S (ms)	**5886**	5806	**5786**
Normalized	98.3%	99.65%	100%
Standard Deviation	0.9%	0.2%	1%
Renaissance - F.H.R (ms)	**6388**	6356	**6335**
Normalized	99.17%	99.67%	100%
Standard Deviation	0.3%	1.1%	1.5%
TensorFlow Lite - SqueezeNet (us)	6266	**6228**	**6282**
Normalized	99.4%	100%	99.15%
Standard Deviation	2.4%	0.9%	0.7%
TensorFlow Lite - I.R.V (us)	84278	**82937**	**86774**
Normalized	98.41%	100%	95.58%
Standard Deviation	2%	0.6%	1.2%
TensorFlow Lite - NASNet Mobile (us)	**52321**	53029	**53490**
Normalized	100%	98.66%	97.81%
Standard Deviation	1.9%	2.5%	2.1%
TensorFlow Lite - Mobilenet Quant (us)	**3184**	**3113**	3162
Normalized	97.77%	100%	98.44%
Standard Deviation	1.8%	0.8%	0.5%
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	**3.675**	**3.675**	**3.685**
Normalized	99.73%	99.73%	100%
Standard Deviation	0.1%	0.2%	0.1%
Renaissance - Rand Forest (ms)	**831.1**	**826.8**	828.9
Normalized	99.48%	100%	99.75%
Standard Deviation	1.4%	1.9%	0.4%
Renaissance - Apache Spark Bayes (ms)	929.0	**932.7**	**927.0**
Normalized	99.78%	99.39%	100%
Standard Deviation	0.5%	0.6%	0.6%

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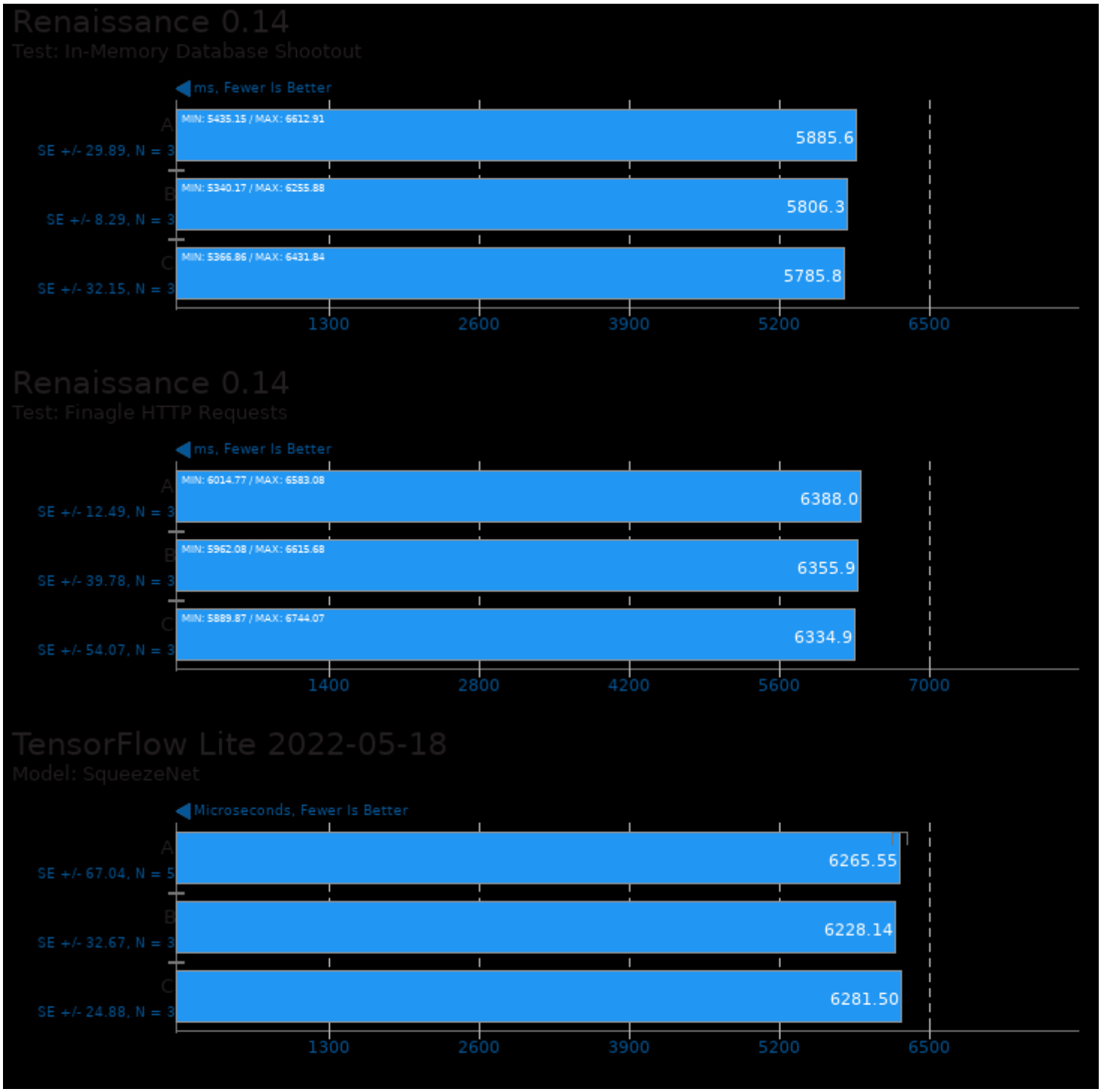

Renaissance 0.14
Test: Akka Unbalanced Cobwebbed Tree
ms, Fewer Is Better
A
MIN: 16814.72 / MAX: 21736.24
21301.3
SE +/- 283.78, N = 3
B
MIN: 17397.75 / MAX: 21876.4
21707.3
SE +/- 94.75, N = 3
C
MIN: 17241.95 / MAX: 22531.6
21944.1
SE +/- 246.85, N = 4
5K
10K
15K
20K
25K
Renaissance 0.14
Test: Savina Reactors.IO
ms, Fewer Is Better
A
MIN: 10534.84 / MAX: 16138.09
10727.0
SE +/- 132.43, N = 3
B
MIN: 9686.04 / MAX: 17405.76
10556.8
SE +/- 135.20, N = 10
C
MIN: 9808.53 / MAX: 17277.01
10593.1
SE +/- 124.98, N = 12
2K
4K
6K
8K
10K
Renaissance 0.14
Test: ALS Movie Lens
ms, Fewer Is Better
A
MIN: 17405.26 / MAX: 19448.2
17573.2
SE +/- 84.62, N = 3
B
MIN: 17427.28 / MAX: 19480.44
17664.3
SE +/- 137.67, N = 3
C
MIN: 17465.67 / MAX: 19496.03
17678.2
SE +/- 111.73, N = 3
4K
8K
12K
16K
20K

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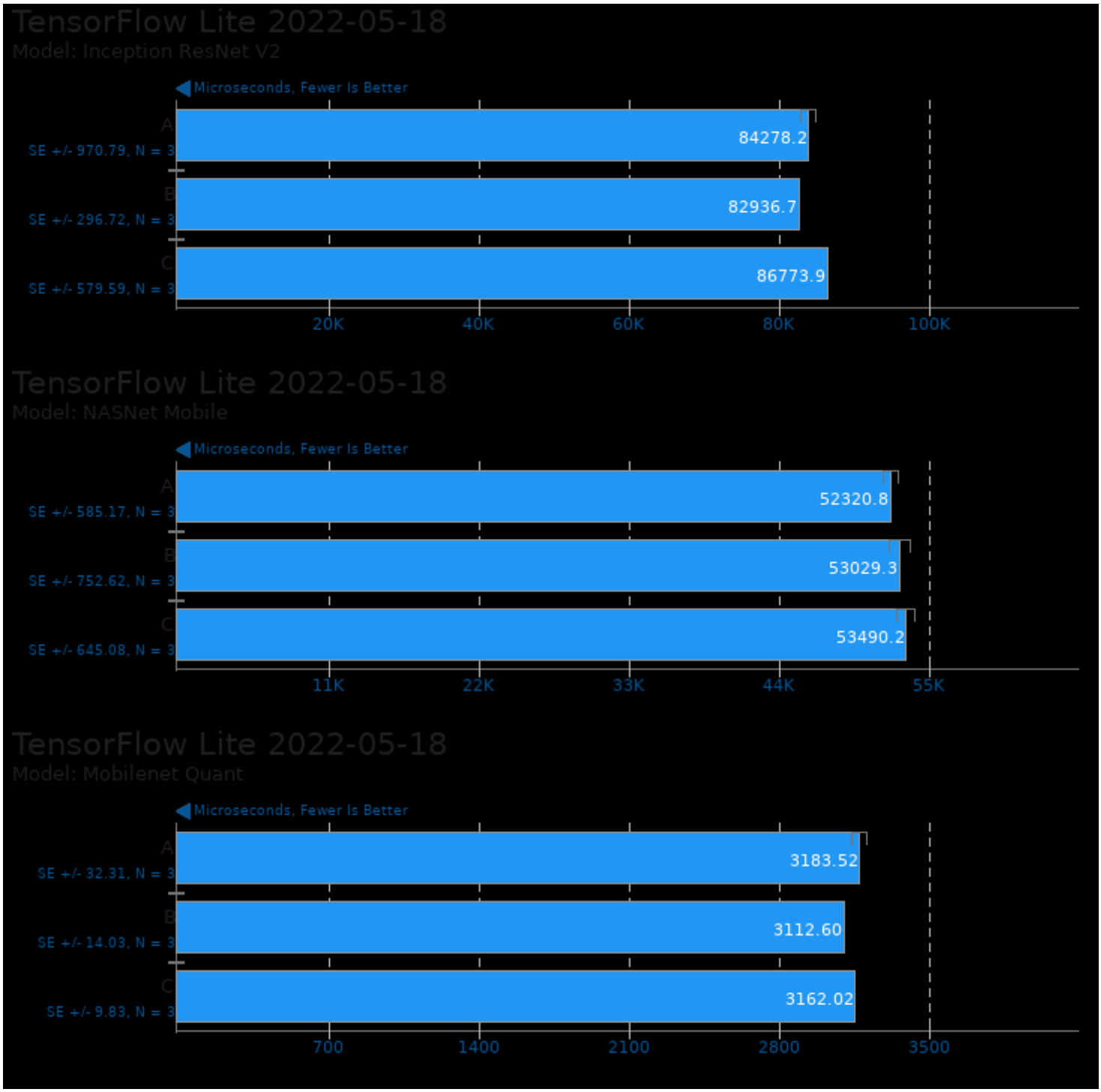

TensorFlow Lite 2022-05-18
Model: Inception V4
Microseconds, Fewer Is Better
A
SE +/- 547.53, N = 15
56636.8
B
SE +/- 509.69, N = 15
56755.4
C
SE +/- 554.56, N = 15
56976.5
12K
24K
36K
48K
60K
Renaissance 0.14
Test: Genetic Algorithm Using Jenetics + Futures
ms, Fewer Is Better
A
MIN: 3113.02 / MAX: 3559.11
SE +/- 36.44, N = 3
3326.4
B
MIN: 3141.44 / MAX: 3499.93
SE +/- 19.65, N = 3
3332.2
C
MIN: 3085.46 / MAX: 3444.45
SE +/- 8.86, N = 3
3312.3
700
1400
2100
2800
3500
Renaissance 0.14
Test: Scala Dotty
ms, Fewer Is Better
A
MIN: 689.17 / MAX: 1180.85
SE +/- 4.67, N = 3
897.1
B
MIN: 706.19 / MAX: 1175.54
SE +/- 0.84, N = 3
909.0
C
MIN: 702.8 / MAX: 1205.94
SE +/- 11.19, N = 15
880.8
200
400
600
800
1000


TensorFlow Lite 2022-05-18
Model: Mobilenet Float
Microseconds, Fewer Is Better
A
SE +/- 15.07, N = 3
4151.90
B
SE +/- 15.42, N = 3
4200.79
C
SE +/- 55.64, N = 15
4326.65
900
1800
2700
3600
4500
Renaissance 0.14
Test: Apache Spark ALS
ms, Fewer Is Better
A
SE +/- 19.56, N = 3
MIN: 3892.98 / MAX: 4338.44
4063.2
B
SE +/- 14.10, N = 3
MIN: 3920.72 / MAX: 4284.67
4080.6
C
SE +/- 13.05, N = 3
MIN: 3939.4 / MAX: 4291.22
4086.2
900
1800
2700
3600
4500
Renaissance 0.14
Test: Apache Spark PageRank
ms, Fewer Is Better
A
SE +/- 8.01, N = 3
MIN: 2977.66 / MAX: 3407.3
3264.2
B
SE +/- 44.51, N = 3
MIN: 2976.08 / MAX: 3487.64
3284.4
C
SE +/- 10.59, N = 3
MIN: 3013.95 / MAX: 3538.2
3315.6
700
1400
2100
2800
3500

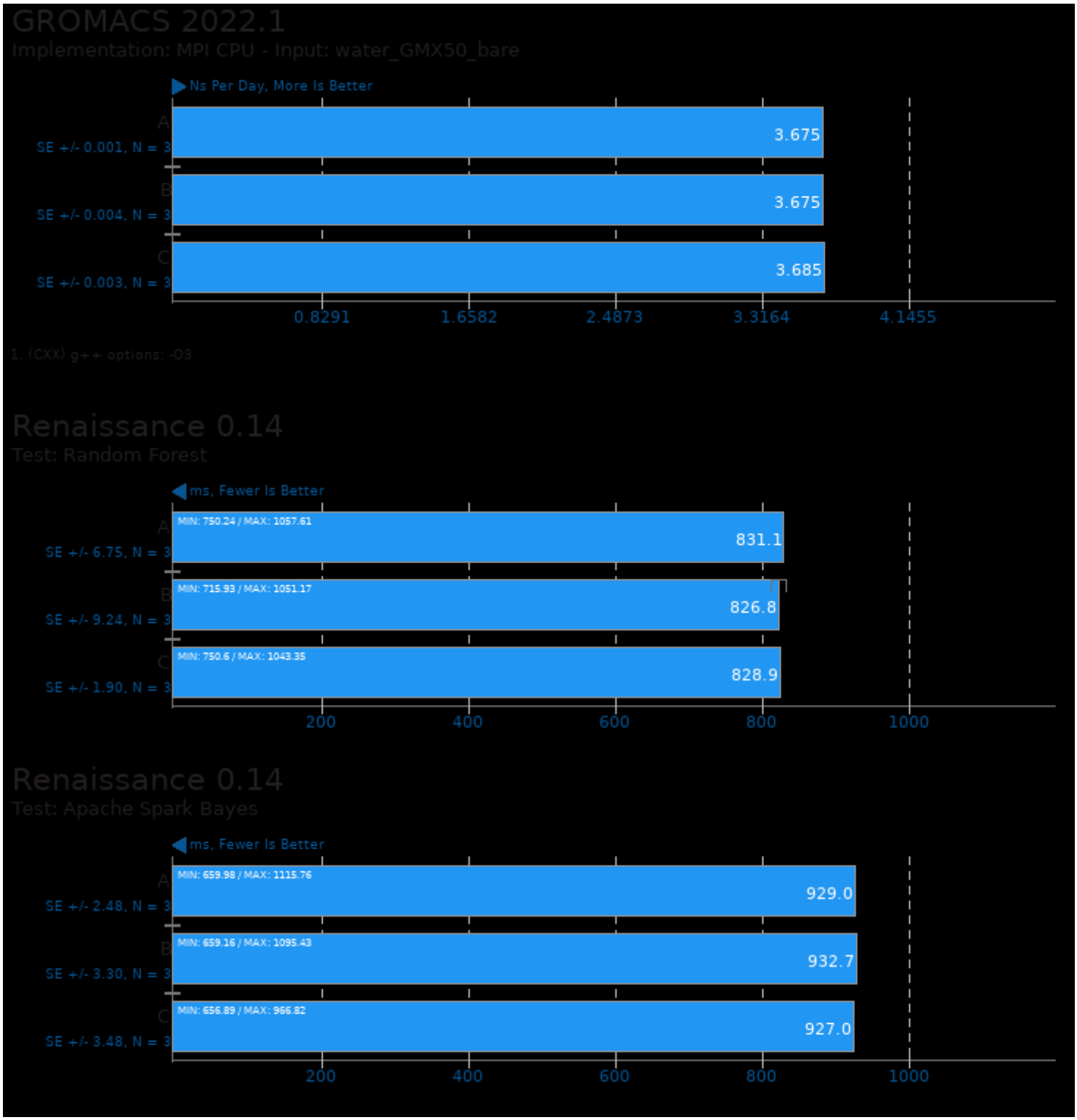
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Renaissance 0.14
Test: In-Memory Database Shootout
ms, Fewer Is Better
A
MIN: 5435.15 / MAX: 6612.91
5885.6
SE +/- 29.89, N = 3
B
MIN: 5340.17 / MAX: 6255.88
5806.3
SE +/- 8.29, N = 3
C
MIN: 5366.86 / MAX: 6431.84
5785.8
SE +/- 32.15, N = 3
1300
2600
3900
5200
6500
Renaissance 0.14
Test: Finagle HTTP Requests
ms, Fewer Is Better
A
MIN: 6014.77 / MAX: 6583.08
6388.0
SE +/- 12.49, N = 3
B
MIN: 5962.08 / MAX: 6615.68
6355.9
SE +/- 39.78, N = 3
C
MIN: 5889.87 / MAX: 6744.07
6334.9
SE +/- 54.07, N = 3
1400
2800
4200
5600
7000
TensorFlow Lite 2022-05-18
Model: SqueezeNet
Microseconds, Fewer Is Better
A
6265.55
SE +/- 67.04, N = 5
B
6228.14
SE +/- 32.67, N = 3
C
6281.50
SE +/- 24.88, N = 3
1300
2600
3900
5200
6500

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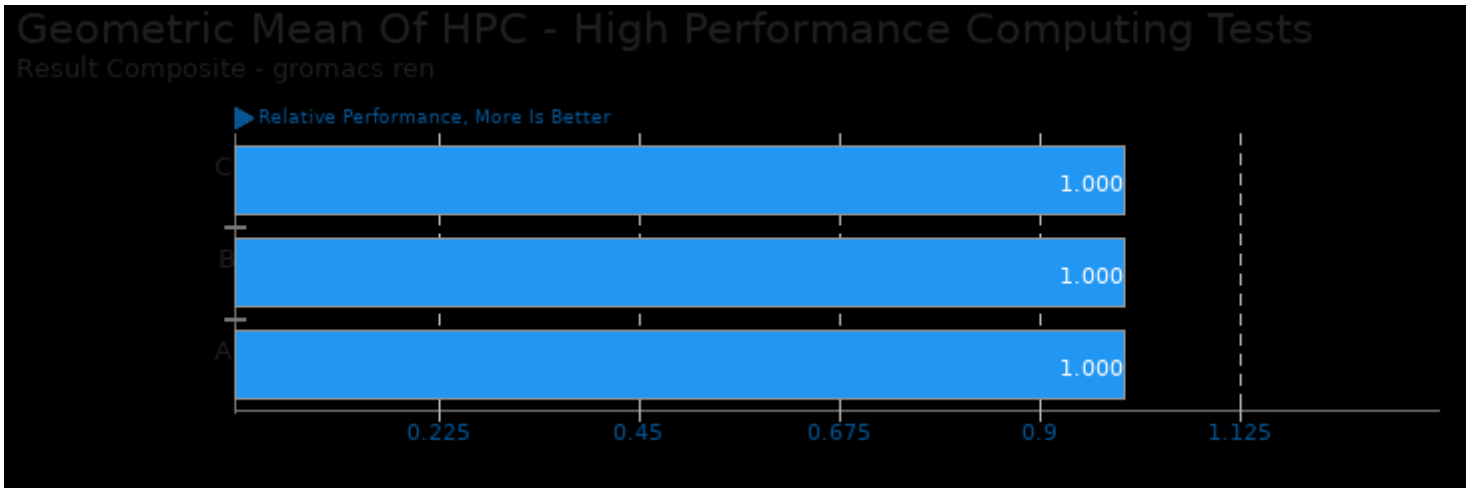

TensorFlow Lite 2022-05-18
Model: Inception ResNet V2
Microseconds, Fewer Is Better
A
SE +/- 970.79, N = 3
84278.2
B
SE +/- 296.72, N = 3
82936.7
C
SE +/- 579.59, N = 3
86773.9
20K
40K
60K
80K
100K
TensorFlow Lite 2022-05-18
Model: NASNet Mobile
Microseconds, Fewer Is Better
A
SE +/- 585.17, N = 3
52320.8
B
SE +/- 752.62, N = 3
53029.3
C
SE +/- 645.08, N = 3
53490.2
11K
22K
33K
44K
55K
TensorFlow Lite 2022-05-18
Model: Mobilenet Quant
Microseconds, Fewer Is Better
A
SE +/- 32.31, N = 3
3183.52
B
SE +/- 14.03, N = 3
3112.60
C
SE +/- 9.83, N = 3
3162.02
700
1400
2100
2800
3500

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GROMACS 2022.1
Implementation: MPI CPU - Input: water_GMX50_bare
Ns Per Day, More Is Better
A
SE +/- 0.001, N = 3
3.675
B
SE +/- 0.004, N = 3
3.675
C
SE +/- 0.003, N = 3
3.685
0.8291
1.6582
2.4873
3.3164
4.1455
1. (CXX) g++ options: -O3
Renaissance 0.14
Test: Random Forest
ms, Fewer Is Better
A
SE +/- 6.75, N = 3
MIN: 750.24 / MAX: 1057.61
831.1
B
SE +/- 9.24, N = 3
MIN: 715.93 / MAX: 1051.17
826.8
C
SE +/- 1.90, N = 3
MIN: 750.6 / MAX: 1043.35
828.9
200
400
600
800
1000
Renaissance 0.14
Test: Apache Spark Bayes
ms, Fewer Is Better
A
SE +/- 2.48, N = 3
MIN: 659.98 / MAX: 1115.76
929.0
B
SE +/- 3.30, N = 3
MIN: 659.16 / MAX: 1095.43
932.7
C
SE +/- 3.48, N = 3
MIN: 656.89 / MAX: 966.82
927.0
200
400
600
800
1000

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



Geometric mean based upon tests: pts/gromacs and pts/tensorflow-lite

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 08:48.