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AMD EPYC 72F3 Performance Benchmarks

AMD EPYC 72F3 Linux benchmarks by Michael Larabel for a Phoronix.com article.

Test Systems:

EPYC 7F32

Processor: AMD EPYC 7F32 8-Core @ 3.70GHz (8 Cores / 16 Threads), Motherboard: Supermicro H12SSL-i v1.01 (2.0 BIOS), Chipset: AMD Starship/Matisse, Memory: 8 x 16 GB DDR4-3200MT/s 18ASF2G72PDZ-3G2E1, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: ASPEED, Network: 2 x Broadcom NetXtreme BCM5720 2-port PCIe

OS: Ubuntu 21.04, Kernel: 5.11.0-16-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.7, Vulkan: 1.0.2, Compiler: GCC 11.0.1 20210413, File-System: ext4, Screen Resolution: 1024x768

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --disable-multilib --enable-checking=release
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0x830104d
Python Notes: Python 3.9.4
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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

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EPYC 72F3

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Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --disable-multilib --enable-checking=release
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
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	EPYC 7F32	EPYC 72F3
CloverLeaf - L.E.H (sec)	**37.06**	**30.30**
Normalized	81.76%	100%
Standard Deviation	0.9%	0.8%
CP2K Molecular Dynamics - Fayalite-FIST (sec)	**1232**	**1119**
Normalized	90.78%	100%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**2.22450**	**1.95806**
Normalized	88.02%	100%
Standard Deviation	0.1%	0%
Timed HMMer Search - P.D.S (sec)	**103.813**	**91.052**
Normalized	87.71%	100%
Standard Deviation	0.1%	0.1%
OpenFOAM - Motorbike 30M (sec)	**59.96**	**48.84**
Normalized	81.45%	100%
Standard Deviation	0.7%	0.2%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	**6.512**	**6.877**
Normalized	94.69%	100%
Standard Deviation	0.3%	0.4%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	**6.374**	**6.868**
Normalized	92.81%	100%
Standard Deviation	0.2%	0.6%
simdjson - Kostya (GB/s)	**2.66**	**3.38**
Normalized	78.7%	100%
Standard Deviation	0.2%	0.3%
simdjson - LargeRand (GB/s)	**0.9**	**1.11**
Normalized	81.08%	100%
Standard Deviation	0%	0%
simdjson - PartialTweets (GB/s)	**3.45**	**4.33**
Normalized	79.68%	100%
Standard Deviation	0%	0.1%
simdjson - DistinctUserID (GB/s)	**3.77**	**4.97**
Normalized	75.86%	100%
Standard Deviation	0.3%	0.3%

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Botan - KASUMI (MiB/s)	**89.799**	**98.695**
Normalized	90.99%	100%
Standard Deviation	0%	0%
Botan - KASUMI - Decrypt (MiB/s)	**87.795**	**94.844**
Normalized	92.57%	100%
Standard Deviation	0%	0%
Botan - AES-256 (MiB/s)	**5153**	**6334**
Normalized	81.36%	100%
Standard Deviation	0.1%	0%
Botan - AES-256 - Decrypt (MiB/s)	**5153**	**6408**
Normalized	80.41%	100%
Standard Deviation	0.2%	0.4%
Botan - Twofish (MiB/s)	**332.346**	**365.888**
Normalized	90.83%	100%
Standard Deviation	0%	0%
Botan - Twofish - Decrypt (MiB/s)	**330.988**	**369.938**
Normalized	89.47%	100%
Standard Deviation	0.1%	0%
Botan - Blowfish (MiB/s)	**394.664**	**438.570**
Normalized	89.99%	100%
Standard Deviation	0.1%	0.3%
Botan - Blowfish - Decrypt (MiB/s)	**393.412**	**436.947**
Normalized	90.04%	100%
Standard Deviation	0%	0.3%
Botan - CAST-256 (MiB/s)	**136.822**	**146.678**
Normalized	93.28%	100%
Standard Deviation	0.1%	0.1%
Botan - CAST-256 - Decrypt (MiB/s)	**136.895**	**146.694**
Normalized	93.32%	100%
Standard Deviation	0%	0.1%
Botan - ChaCha20Poly1305 (MiB/s)	**754.913**	**838.024**
Normalized	90.08%	100%
Standard Deviation	0%	0.2%
Botan - ChaCha20Poly1305 - Decrypt (MiB/s)	**748.892**	**824.760**
Normalized	90.8%	100%
Standard Deviation	0.8%	0.1%
LuxCoreRender - DLSC - CPU (M samples/sec)	**1.71**	**1.86**
Normalized	91.94%	100%
Standard Deviation	0.9%	1.2%
LuxCoreRender - Danish Mood - CPU (M samples/sec)	**1.00**	**1.25**
Normalized	80%	100%
Standard Deviation	1.5%	2.9%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	**2.59**	**2.79**
Normalized	92.83%	100%
Standard Deviation	0.4%	0.7%
LuxCoreRender - LuxCore Benchmark - CPU (M samples/sec)	**1.20**	**1.40**
Normalized	85.71%	100%
Standard Deviation	0.5%	0.4%
LuxCoreRender - R.C.a.P - CPU (M samples/sec)	**5.78**	**6.43**
Normalized	89.89%	100%
Standard Deviation	4%	3.8%
OSPray - San Miguel - SciVis (FPS)	**12.55**	**14.63**
Normalized	85.78%	100%
Standard Deviation	0.7%	0.8%

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OSPray - XFrog Forest - SciVis (FPS)	**2.39**	**2.81**
Normalized	85.05%	100%
Standard Deviation	0%	0.2%
OSPray - San Miguel - Path Tracer (FPS)	**0.95**	**1.18**
Normalized	80.51%	100%
Standard Deviation	0.1%	0.6%
OSPray - NASA Streamlines - SciVis (FPS)	**17.39**	**20**
Normalized	86.95%	100%
Standard Deviation	1%	
OSPray - XFrog Forest - Path Tracer (FPS)	**1.27**	**1.51**
Normalized	84.11%	100%
Standard Deviation	0.1%	0.3%
OSPray - M.R - SciVis (FPS)	**8.26**	**10.53**
Normalized	78.44%	100%
Standard Deviation	0%	0%
OSPray - NASA Streamlines - Path Tracer (FPS)	**3.64**	**4.20**
Normalized	86.67%	100%
Standard Deviation	0%	0.2%
OSPray - M.R - Path Tracer (FPS)	**125**	**166.67**
Normalized	75%	100%
Standard Deviation		0%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	**13.27**	**14.70**
Normalized	90.27%	100%
Standard Deviation	0.1%	0.8%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	**27.59**	**36.27**
Normalized	76.07%	100%
Standard Deviation	2.6%	0.3%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**32.88**	**43.86**
Normalized	74.97%	100%
Standard Deviation	3%	3%
Embree - Pathtracer - Crown (FPS)	**9.9409**	**12.1280**
Normalized	81.97%	100%
Standard Deviation	0.6%	0.3%
Embree - Pathtracer ISPC - Crown (FPS)	**9.4810**	**11.9764**
Normalized	79.16%	100%
Standard Deviation	0.2%	0.6%
Embree - Pathtracer - Asian Dragon (FPS)	**10.7273**	**13.6623**
Normalized	78.52%	100%
Standard Deviation	0.5%	0.7%
Embree - Pathtracer - Asian Dragon Obj (FPS)	**9.9078**	**12.5906**
Normalized	78.69%	100%
Standard Deviation	0.3%	0.2%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	**10.6887**	**13.7730**
Normalized	77.61%	100%
Standard Deviation	1.2%	0.8%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	**9.4895**	**12.1326**
Normalized	78.21%	100%
Standard Deviation	0.3%	0.4%
SVT-AV1 - Enc Mode 0 - 1080p (FPS)	**0.112**	**0.129**
Normalized	86.82%	100%
Standard Deviation	3%	1.6%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	**4.214**	**4.540**
Normalized	92.82%	100%
Standard Deviation	1.1%	0.7%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)	**32.966**	**35.096**

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Normalized	93.93%	100%
Standard Deviation	0.3%	0.3%
SVT-HEVC - 1 - Bosphorus 1080p (FPS)	**7.45**	**8.39**
Normalized	88.8%	100%
Standard Deviation	0.1%	0.4%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	**114.17**	**121.85**
Normalized	93.7%	100%
Standard Deviation	0.2%	0.4%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	**236.74**	**255.08**
Normalized	92.81%	100%
Standard Deviation	0.3%	0.4%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	**159.16**	**173.44**
Normalized	91.77%	100%
Standard Deviation	1.4%	2%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	**167.36**	**181.31**
Normalized	92.31%	100%
Standard Deviation	0.3%	0.4%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	**124.85**	**137.44**
Normalized	90.84%	100%
Standard Deviation	0.2%	0.4%
x265 - Bosphorus 4K (FPS)	**9.88**	**11.63**
Normalized	84.95%	100%
Standard Deviation	2.4%	2.9%
x265 - Bosphorus 1080p (FPS)	**49.64**	**58.24**
Normalized	85.23%	100%
Standard Deviation	1.1%	1.2%
ACES DGEMM - S.F.P.R (GFLOP/s)	**2.998614**	**3.291354**
Normalized	91.11%	100%
Standard Deviation	2.1%	1.1%
OpenVKL - vklBenchmark (Items / Sec)	**115**	**145**
Normalized	79.31%	100%
Standard Deviation	0.5%	
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	**359517**	**411547**
Normalized	87.36%	100%
Standard Deviation	0.1%	0.5%
Himeno Benchmark - P.P.S (MFLOPS)	**4367**	**4589**
Normalized	95.16%	100%
Standard Deviation	0.5%	5.7%
libavif avifenc - 6 (sec)	**13.039**	**11.619**
Normalized	89.11%	100%
Standard Deviation	0.2%	0.5%
libavif avifenc - 10 (sec)	**3.348**	**3.012**
Normalized	89.96%	100%
Standard Deviation	0.6%	0.6%
libavif avifenc - 6, Lossless (sec)	**56.283**	**49.211**
Normalized	87.43%	100%
Standard Deviation	0.7%	0.3%
Timed Godot Game Engine Compilation - Time To Compile (sec)	**136.993**	**126.070**
Normalized	92.03%	100%
Standard Deviation	0.3%	0%
Timed Linux Kernel Compilation - Time To Compile	**94.779**	**89.361**
Normalized	94.28%	100%
Standard Deviation	2.4%	2.1%
Timed Node.js Compilation - Time To Compile (sec)	**419.137**	**397.502**

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Normalized	94.84%	100%
Standard Deviation	0.2%	0.1%
Numpy Benchmark (Score)	**333.94**	**443.12**
Normalized	75.36%	100%
Standard Deviation	1.4%	0.4%
Timed Erlang/OTP Compilation - Time To Compile	**134.482**	**117.065**
Normalized	87.05%	100%
Standard Deviation	0.3%	0.2%
Timed Wasmer Compilation - Time To Compile (sec)	**59.646**	**54.445**
Normalized	91.28%	100%
Standard Deviation	1.5%	0.3%
DeepSpeech - CPU (sec)	**66.47651**	**65.25172**
Normalized	98.16%	100%
Standard Deviation	0.2%	1.8%
FLAC Audio Encoding - WAV To FLAC (sec)	**8.175**	**6.993**
Normalized	85.54%	100%
Standard Deviation	0.2%	0.2%
LAME MP3 Encoding - WAV To MP3 (sec)	**8.194**	**6.699**
Normalized	81.75%	100%
Standard Deviation	0.3%	0.3%
Opus Codec Encoding - WAV To Opus Encode (sec)	**8.009**	**7.132**
Normalized	89.05%	100%
Standard Deviation	0.5%	0.5%
Helsing - 12 digit (sec)	**5.749**	**5.257**
Normalized	91.44%	100%
RNNoise (sec)	**20.080**	**17.854**
Normalized	88.91%	100%
Standard Deviation	0.8%	0.4%
SecureMark - SecureMark-TLS (marks)	**204358**	**282560**
Normalized	72.32%	100%
Standard Deviation	0.4%	0.8%
Liquid-DSP - 1 - 256 - 57 (samples/s)	**60958333**	**68262000**
Normalized	89.3%	100%
Standard Deviation	0.3%	1.5%
Liquid-DSP - 2 - 256 - 57 (samples/s)	**121476667**	**136563333**
Normalized	88.95%	100%
Standard Deviation	0.2%	0.7%
Liquid-DSP - 4 - 256 - 57 (samples/s)	**242136667**	**271593333**
Normalized	89.15%	100%
Standard Deviation	0.2%	1%
Liquid-DSP - 8 - 256 - 57 (samples/s)	**482260000**	**531646667**
Normalized	90.71%	100%
Standard Deviation	0.1%	0.7%
Liquid-DSP - 16 - 256 - 57 (samples/s)	**525046667**	**593886667**
Normalized	88.41%	100%
Standard Deviation	2.6%	0.1%
ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)	**3668**	**5522**
Normalized	66.43%	100%
Standard Deviation	0.8%	2%
ASKAP - tConvolve MT - Degridding (Million Grid Points/sec)	**3745**	**4950**
Normalized	75.64%	100%
Standard Deviation	0.4%	1.2%
ASKAP - tConvolve MPI - Gridding (Mpix/sec)	**7666**	**8359**

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Normalized	91.71%	100%
Standard Deviation	2.8%	1.7%
ASKAP - tConvolve OpenMP - Gridding (Million Grid Points/sec)	**3269**	**5102**
Normalized	64.08%	100%
Standard Deviation	2.9%	3.9%
ASKAP - tConvolve OpenMP - Degridding (Million Grid Points/sec)	**3648**	**5542**
Normalized	65.81%	100%
Standard Deviation	1.1%	2.5%
KeyDB (Ops/sec)	**430033**	**506884**
Normalized	84.84%	100%
Standard Deviation	1.8%	0.6%
TensorFlow Lite - SqueezeNet (us)	**209912**	**191115**
Normalized	91.05%	100%
Standard Deviation	0.1%	0.1%
TensorFlow Lite - Inception V4 (us)	**3012153**	**2726880**
Normalized	90.53%	100%
Standard Deviation	0.1%	0%
TensorFlow Lite - NASNet Mobile (us)	**196762**	**160671**
Normalized	81.66%	100%
Standard Deviation	1.7%	0.1%
TensorFlow Lite - Mobilenet Float (us)	**140705**	**125985**
Normalized	89.54%	100%
Standard Deviation	0.2%	0.1%
TensorFlow Lite - Mobilenet Quant (us)	**143386**	**137252**
Normalized	95.72%	100%
Standard Deviation	0.3%	0.1%
TensorFlow Lite - I.R.V (us)	**2733647**	**2453380**
Normalized	89.75%	100%
Standard Deviation	0.1%	0%
PostgreSQL pgbench - 100 - 50 - Read Only (TPS)	**213997**	**233099**
Normalized	91.81%	100%
Standard Deviation	0.3%	0.2%
PostgreSQL pgbench - 100 - 50 - Read Only - Average Latency (ms)	**0.234**	**0.215**
Normalized	91.88%	100%
Standard Deviation	0.2%	0.3%
PostgreSQL pgbench - 100 - 100 - Read Only (TPS)	**222181**	**243193**
Normalized	91.36%	100%
Standard Deviation	0%	0.4%
PostgreSQL pgbench - 100 - 100 - Read Only - Average Latency (ms)	**0.45**	**0.411**
Normalized	91.33%	100%
Standard Deviation	0%	0.4%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	**220898**	**244870**
Normalized	90.21%	100%
Standard Deviation	0.2%	0.1%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)	**1.132**	**1.021**
Normalized	90.19%	100%
Standard Deviation	0.2%	0.1%
PostgreSQL pgbench - 100 - 100 - Read Write (TPS)	**23070**	**25015**
Normalized	92.22%	100%
Standard Deviation	1.4%	2.9%

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PostgreSQL pgbench - 100 - 100 - Read Write - Average Latency (ms)	**4.337**	**4.002**
Normalized	92.28%	100%
Standard Deviation	1.4%	2.9%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	**19989**	**21809**
Normalized	91.65%	100%
Standard Deviation	2.6%	0.6%
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)	**12.520**	**11.469**
Normalized	91.61%	100%
Standard Deviation	2.5%	0.6%
ASTC Encoder - Medium (sec)	**6.2722**	**5.1916**
Normalized	82.77%	100%
Standard Deviation	0.4%	0.1%
ASTC Encoder - Thorough (sec)	**15.3375**	**12.6125**
Normalized	82.23%	100%
Standard Deviation	0.1%	0.1%
ASTC Encoder - Exhaustive (sec)	**125.0912**	**100.1169**
Normalized	80.04%	100%
Standard Deviation	0%	0.1%
KTX-Software toktx - UASTC 3 (sec)	**13.079**	**11.191**
Normalized	85.56%	100%
Standard Deviation	0.1%	0.1%
KTX-Software toktx - Zstd Compression 9 (sec)	**2.753**	**2.468**
Normalized	89.65%	100%
Standard Deviation	0.4%	0.2%
KTX-Software toktx - Z.C.1 (sec)	**23.827**	**17.918**
Normalized	75.2%	100%
Standard Deviation	0.2%	0.7%
KTX-Software toktx - U.3.Z.C.1 (sec)	**21.000**	**16.642**
Normalized	79.25%	100%
Standard Deviation	0.4%	0.5%
KTX-Software toktx - U.4.Z.C.1 (sec)	**355.812**	**310.534**
Normalized	87.27%	100%
Standard Deviation	0.1%	0%
Caffe - AlexNet - CPU - 100 (ms)	**69469**	**37383**
Normalized	53.81%	100%
Standard Deviation	0.2%	0.3%
Caffe - GoogleNet - CPU - 100 (ms)	**168666**	**102194**
Normalized	60.59%	100%
Standard Deviation	0.1%	0.4%
TNN - CPU - MobileNet v2 (ms)	**273.505**	**246.263**
Normalized	90.04%	100%
Standard Deviation	0.5%	0.1%
TNN - CPU - SqueezeNet v1.1 (ms)	**262.077**	**243.279**
Normalized	92.83%	100%
Standard Deviation	0.1%	0%
PlaidML - No - Inference - ResNet 50 - CPU (FPS)	**6.06**	**9.85**
Normalized	61.52%	100%
Standard Deviation	0.8%	0.9%
PyBench - T.F.A.T.T (Milliseconds)	**1026**	**834**
Normalized	81.29%	100%
Standard Deviation	0.5%	0.5%
PHPBench - P.B.S (Score)	**612758**	**730648**
Normalized	83.87%	100%

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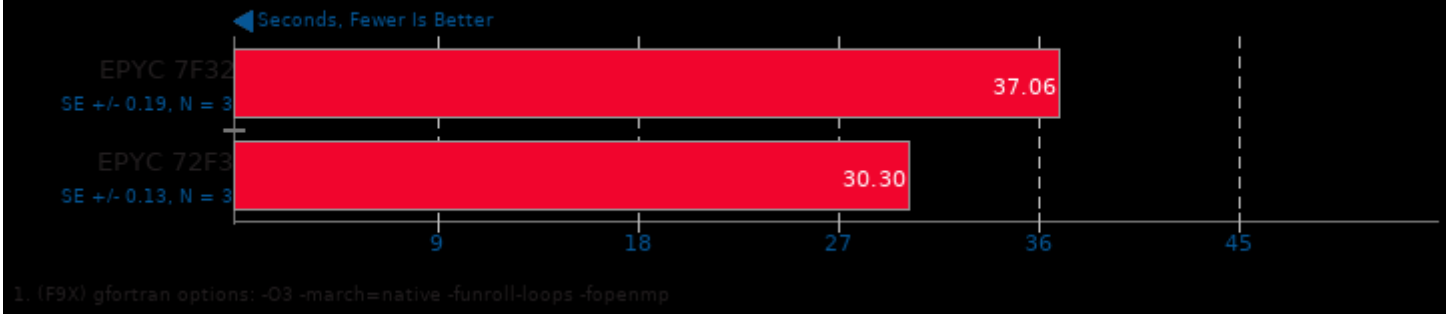
Standard Deviation	0.6%	1.2%
WavPack Audio Encoding - WAV To WavPack (sec)	**13.797**	**13.061**
Normalized	94.67%	100%
Standard Deviation	0.2%	0%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000 (val/sec)	**1143072**	**1424062**
Normalized	80.27%	100%
Standard Deviation	0.2%	0.6%
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	**1335616**	**1662367**
Normalized	80.34%	100%
Standard Deviation	0.1%	0.4%
Xmrig - Wownero - 1M (H/s)	**7941**	**8174**
Normalized	97.15%	100%
Standard Deviation	0.1%	0.1%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	**197.114920**	**228.271826**
Normalized	86.35%	100%
Standard Deviation	0.7%	0.1%
HammerDB - MariaDB - 8 - 250 (New Orders/min)	**74690**	**89275**
Normalized	83.66%	100%
Standard Deviation	0.2%	0.4%
HammerDB - MariaDB - 8 - 250 (Transactions/min)	**226284**	**270521**
Normalized	83.65%	100%
Standard Deviation	0.3%	0.4%
HammerDB - MariaDB - 16 - 250 (New Orders/min)	**49927**	**63322**
Normalized	78.85%	100%
Standard Deviation	2.6%	2.5%
HammerDB - MariaDB - 16 - 250 (Transactions/min)	**151417**	**191959**
Normalized	78.88%	100%
Standard Deviation	2.4%	2.5%
HammerDB - MariaDB - 32 - 250 (New Orders/min)	**54048**	**63915**
Normalized	84.56%	100%
Standard Deviation	4.5%	4%
HammerDB - MariaDB - 32 - 250 (Transactions/min)	**163740**	**193550**
Normalized	84.6%	100%
Standard Deviation	4.5%	4.1%
HammerDB - PostgreSQL - 32 - 250	**617710**	**656397**
Normalized	94.11%	100%
Standard Deviation	6.9%	2.6%

AMD EPYC 72F3 Performance Benchmarks

CloverLeaf

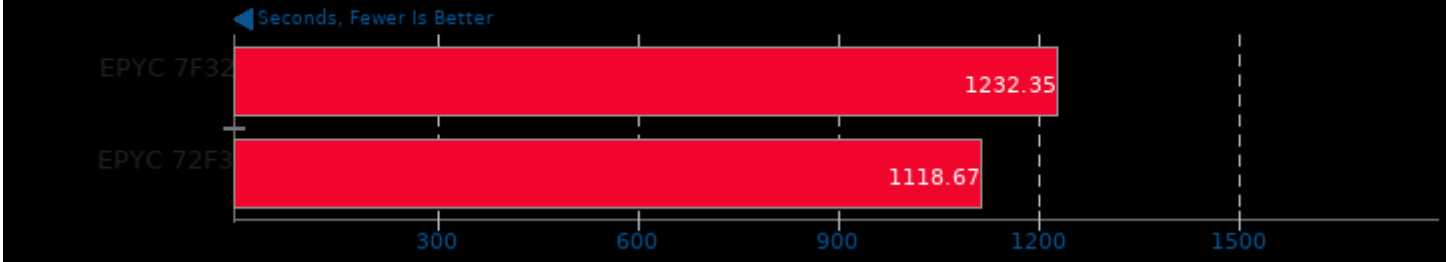
Lagrangian-Eulerian Hydrodynamics



1. (F9X) gfortran options: -O3 -march=native -funroll-loops -fopenmp

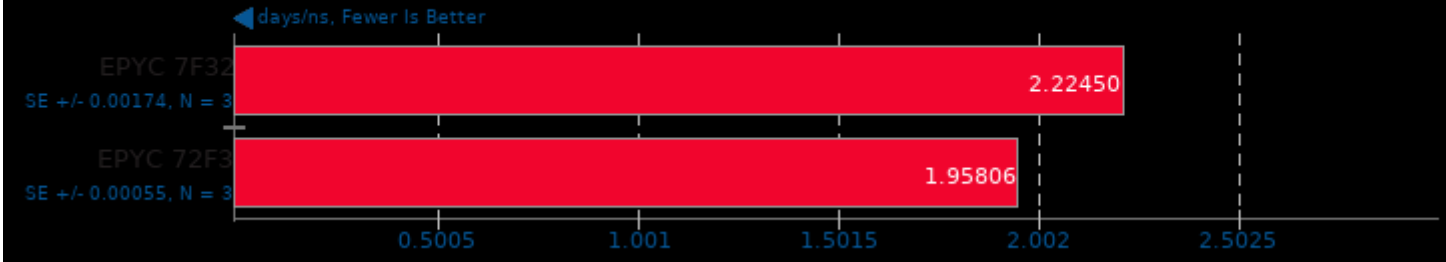
CP2K Molecular Dynamics 8.1

Input: Fayalite-FIST



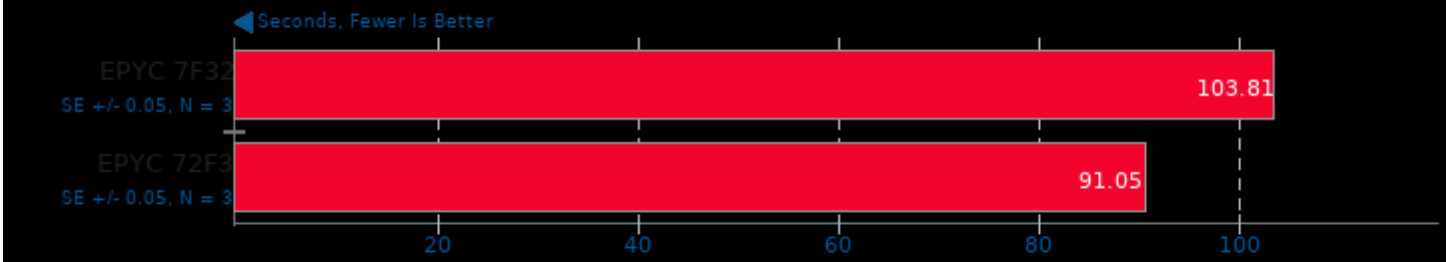
NAMD 2.14

ATPase Simulation - 327,506 Atoms



Timed HMMer Search 3.3.1

Pfam Database Search

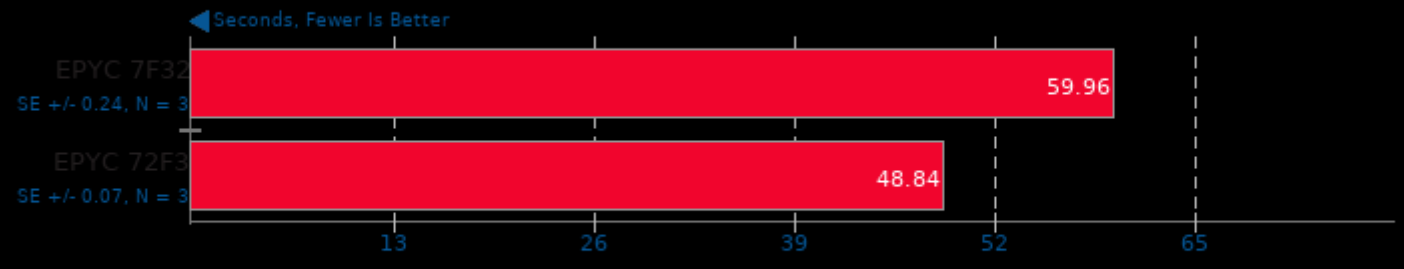


1. (CC) gcc options: -O3 -pthread -lhmmer -leasel -lm

AMD EPYC 72F3 Performance Benchmarks

OpenFOAM 8

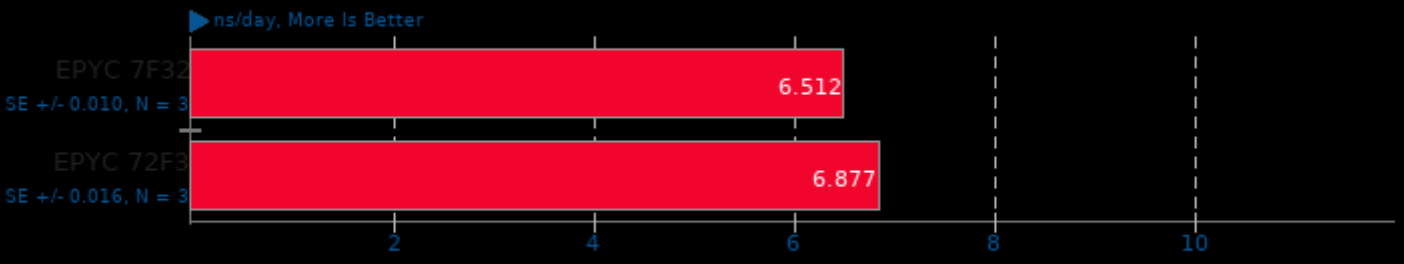
Input: Motorbike 30M



1. (CXX) g++ options: -std=c++11 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfiniteVolume -lgenericPatch

LAMMPS Molecular Dynamics Simulator 29Oct2020

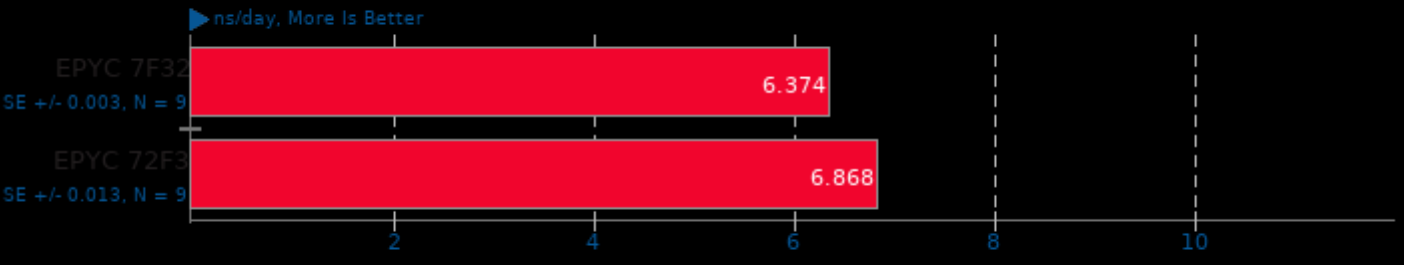
Model: 20k Atoms



1. (CXX) g++ options: -O3 -pthread -lm

LAMMPS Molecular Dynamics Simulator 29Oct2020

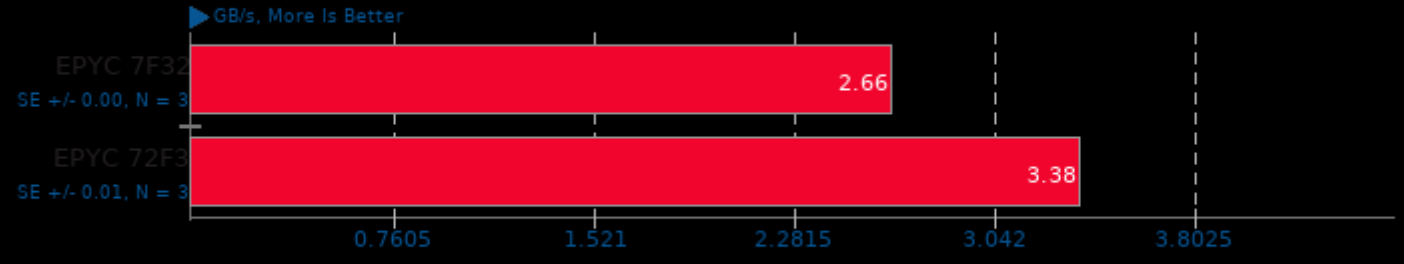
Model: Rhodopsin Protein



1. (CXX) g++ options: -O3 -pthread -lm

simdjson 0.8.2

Throughput Test: Kostya

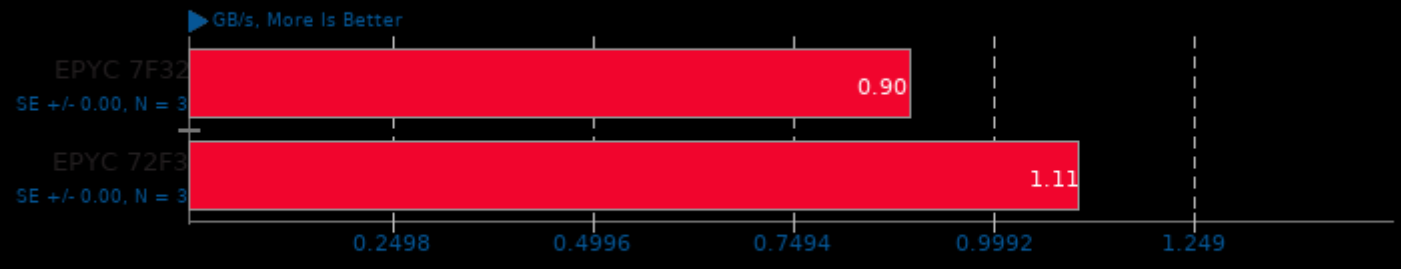


1. (CXX) g++ options: -O3 -pthread

AMD EPYC 72F3 Performance Benchmarks

simdjson 0.8.2

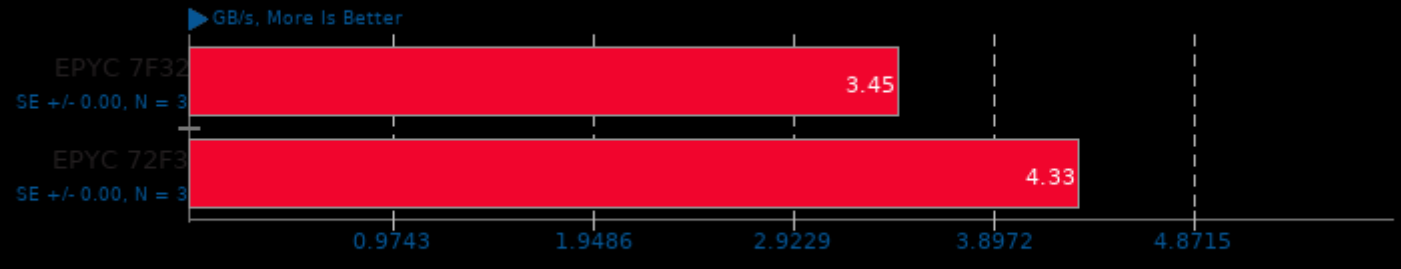
Throughput Test: LargeRandom



1. (CXX) g++ options: -O3 -pthread

simdjson 0.8.2

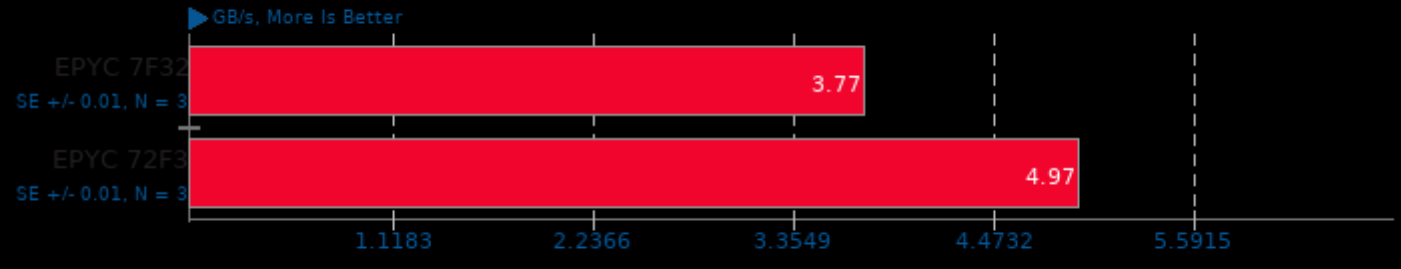
Throughput Test: PartialTweets



1. (CXX) g++ options: -O3 -pthread

simdjson 0.8.2

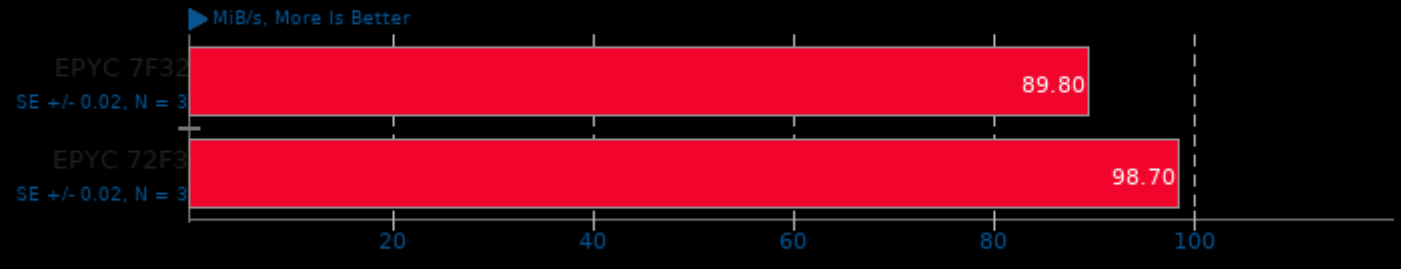
Throughput Test: DistinctUserID



1. (CXX) g++ options: -O3 -pthread

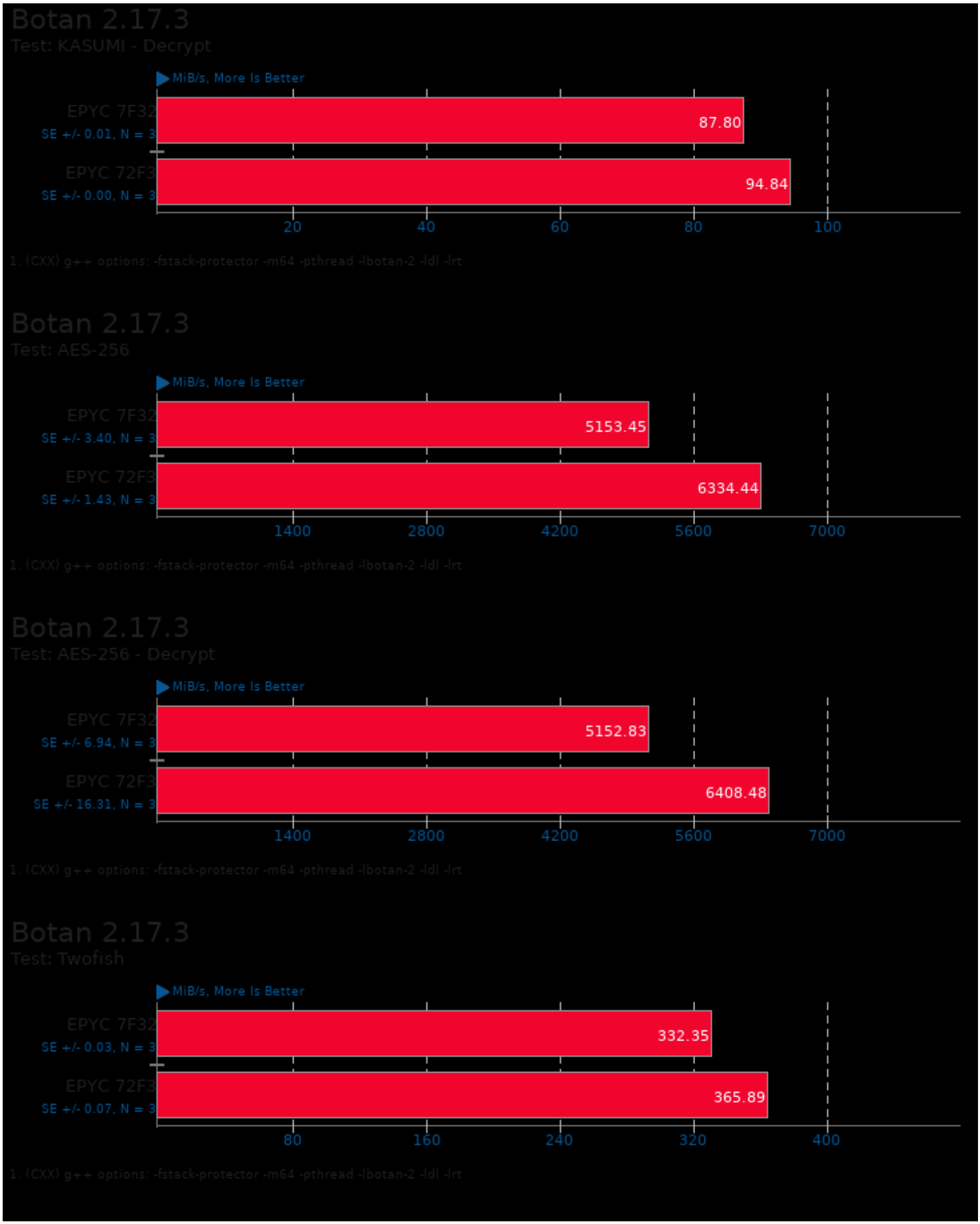
Botan 2.17.3

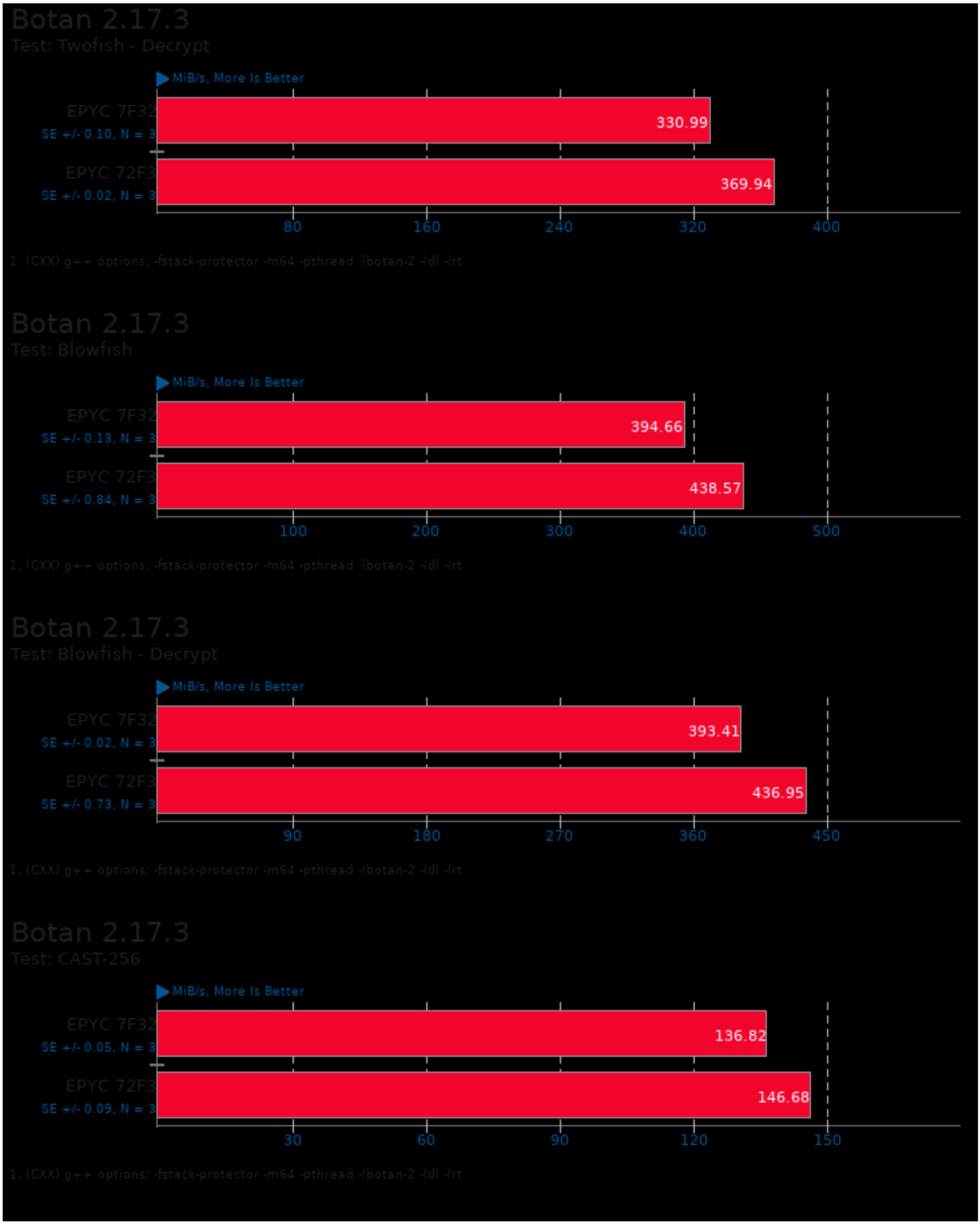
Test: KASUMI

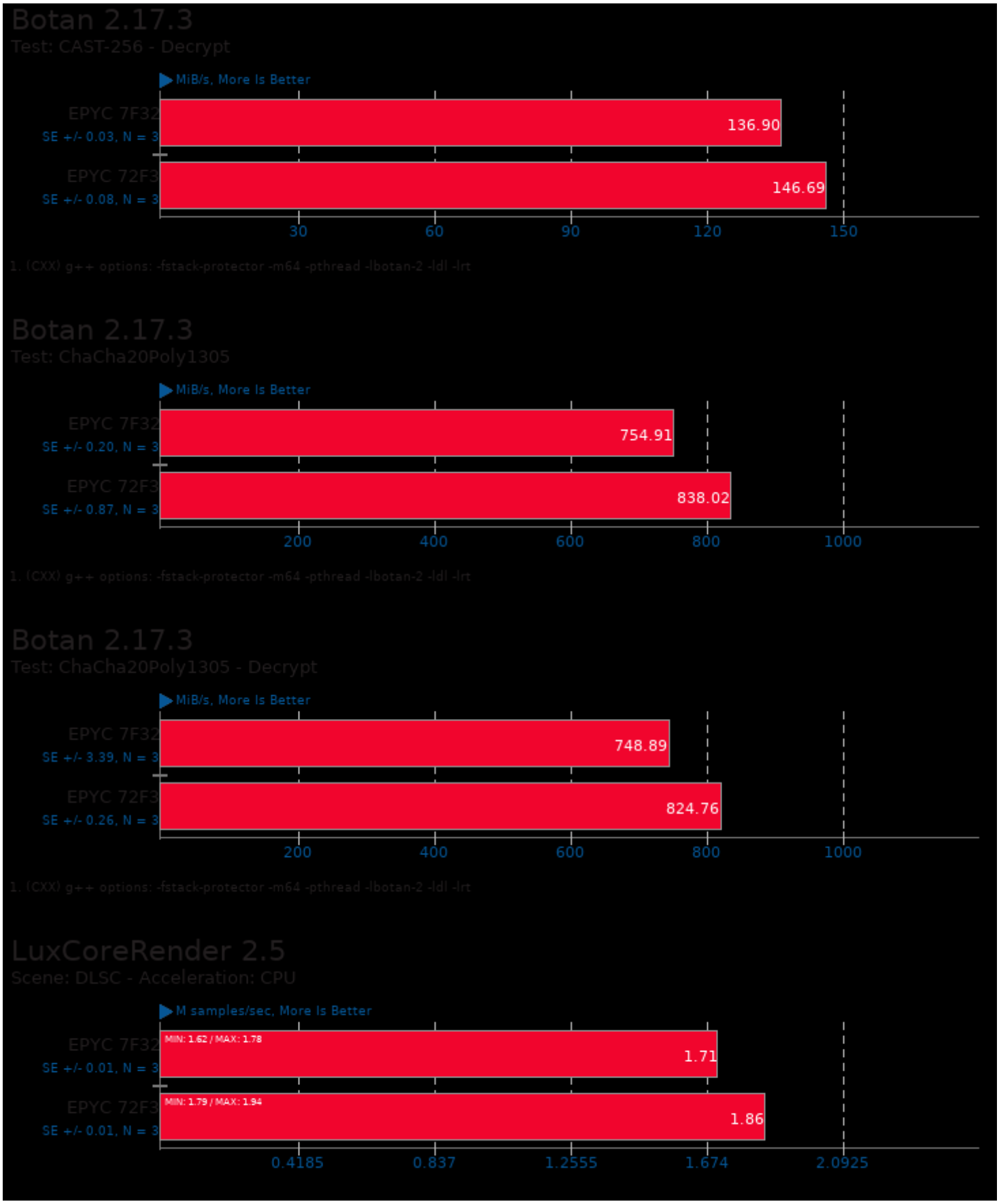


1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

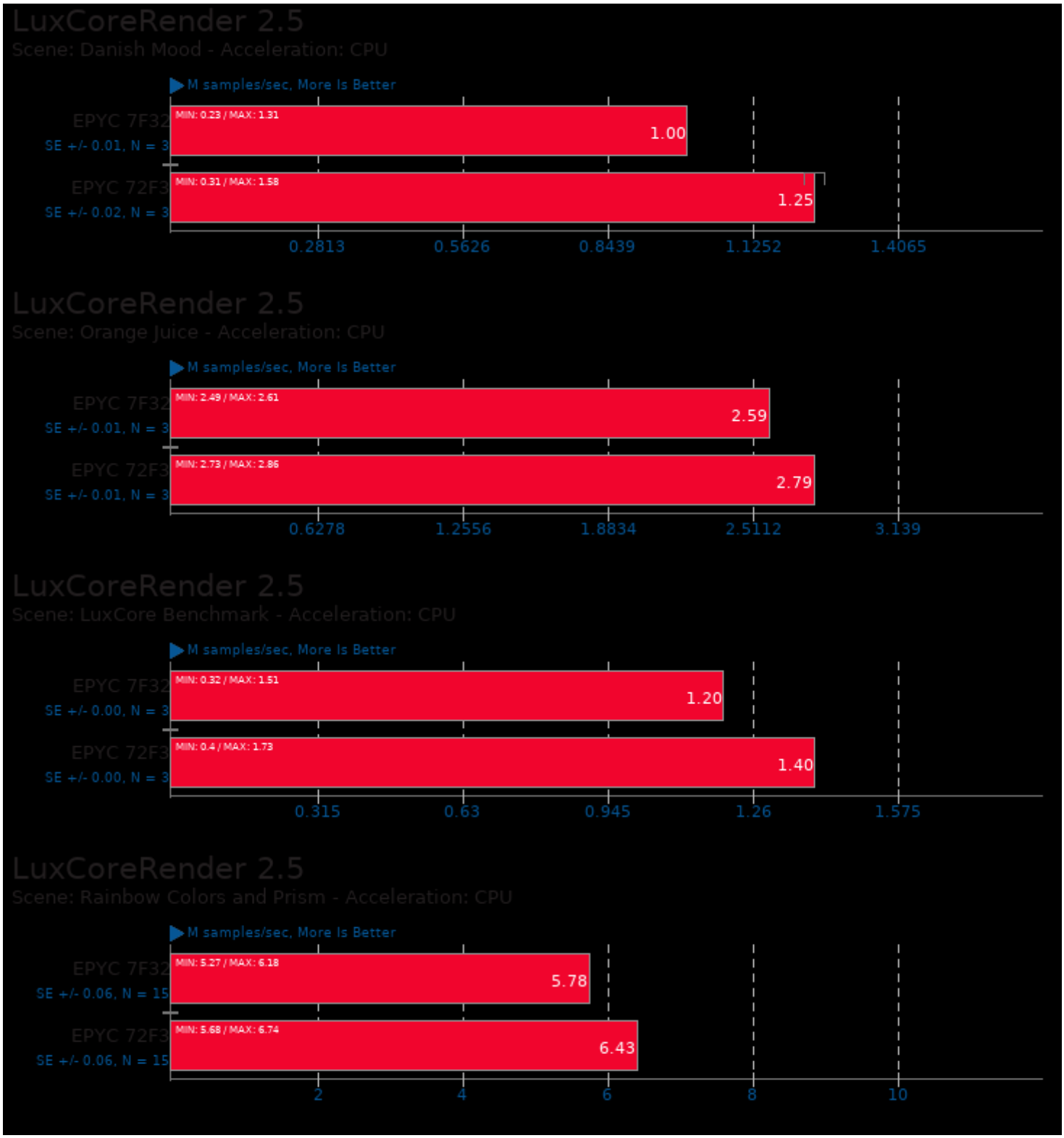
AMD EPYC 72F3 Performance Benchmarks



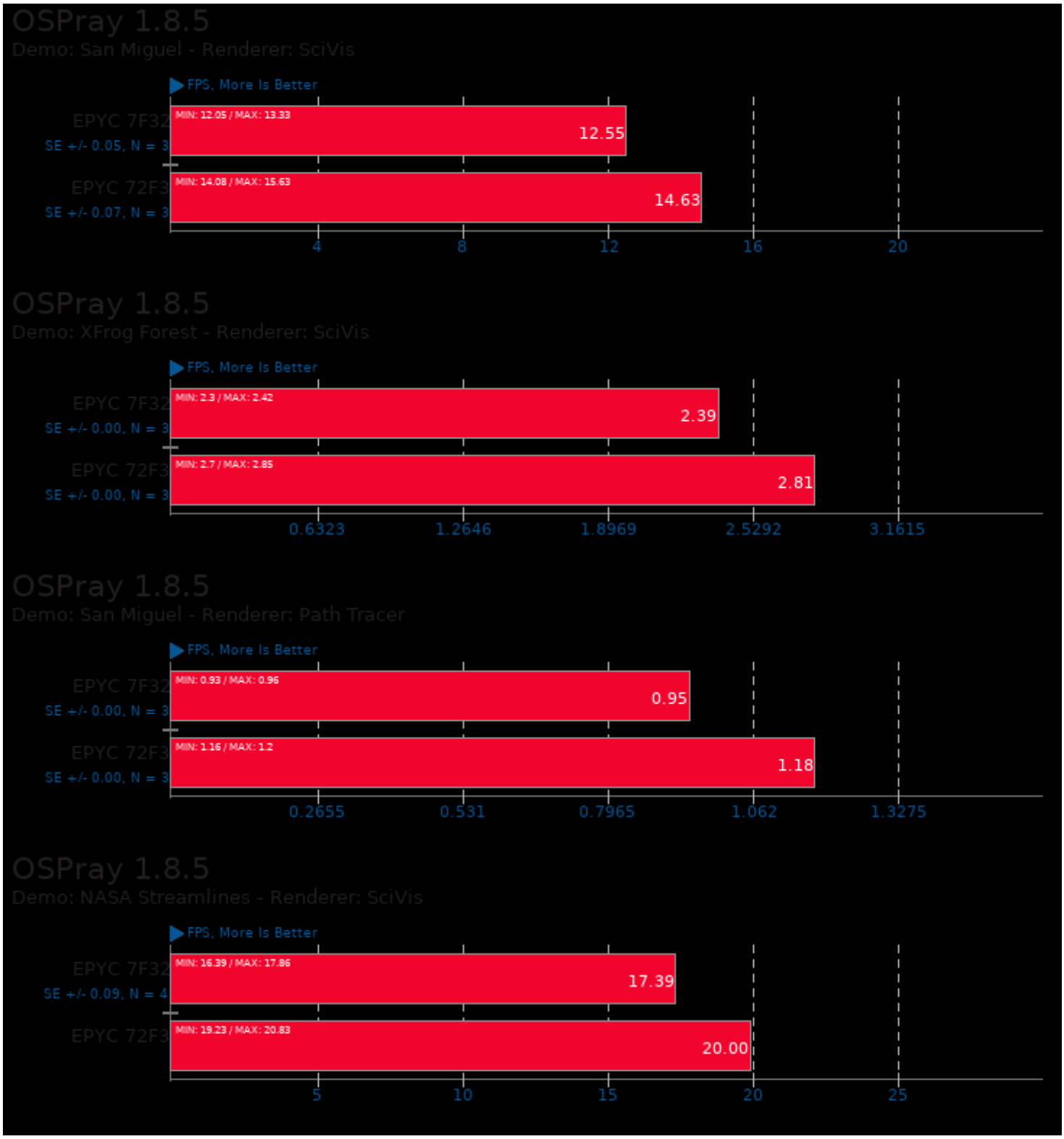

Botan 2.17.3
Test: Twofish - Decrypt
MiB/s, More Is Better
EPYC 7F32
SE +/- 0.10, N = 3
330.99
EPYC 72F3
SE +/- 0.02, N = 3
369.94
80
160
240
320
400
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: Blowfish
MiB/s, More Is Better
EPYC 7F32
SE +/- 0.13, N = 3
394.66
EPYC 72F3
SE +/- 0.84, N = 3
438.57
100
200
300
400
500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: Blowfish - Decrypt
MiB/s, More Is Better
EPYC 7F32
SE +/- 0.02, N = 3
393.41
EPYC 72F3
SE +/- 0.73, N = 3
436.95
90
180
270
360
450
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: CAST-256
MiB/s, More Is Better
EPYC 7F32
SE +/- 0.05, N = 3
136.82
EPYC 72F3
SE +/- 0.09, N = 3
146.68
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.17.3
Test: CAST-256 - Decrypt
MiB/s, More Is Better
EPYC 7F32
SE +/- 0.03, N = 3
136.90
EPYC 72F3
SE +/- 0.08, N = 3
146.69
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: ChaCha20Poly1305
MiB/s, More Is Better
EPYC 7F32
SE +/- 0.20, N = 3
754.91
EPYC 72F3
SE +/- 0.87, N = 3
838.02
200
400
600
800
1000
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: ChaCha20Poly1305 - Decrypt
MiB/s, More Is Better
EPYC 7F32
SE +/- 3.39, N = 3
748.89
EPYC 72F3
SE +/- 0.26, N = 3
824.76
200
400
600
800
1000
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
LuxCoreRender 2.5
Scene: DLSC - Acceleration: CPU
M samples/sec, More Is Better
EPYC 7F32
SE +/- 0.01, N = 3
MIN: 1.62 / MAX: 1.78
1.71
EPYC 72F3
SE +/- 0.01, N = 3
MIN: 1.79 / MAX: 1.94
1.86
0.4185
0.837
1.2555
1.674
2.0925

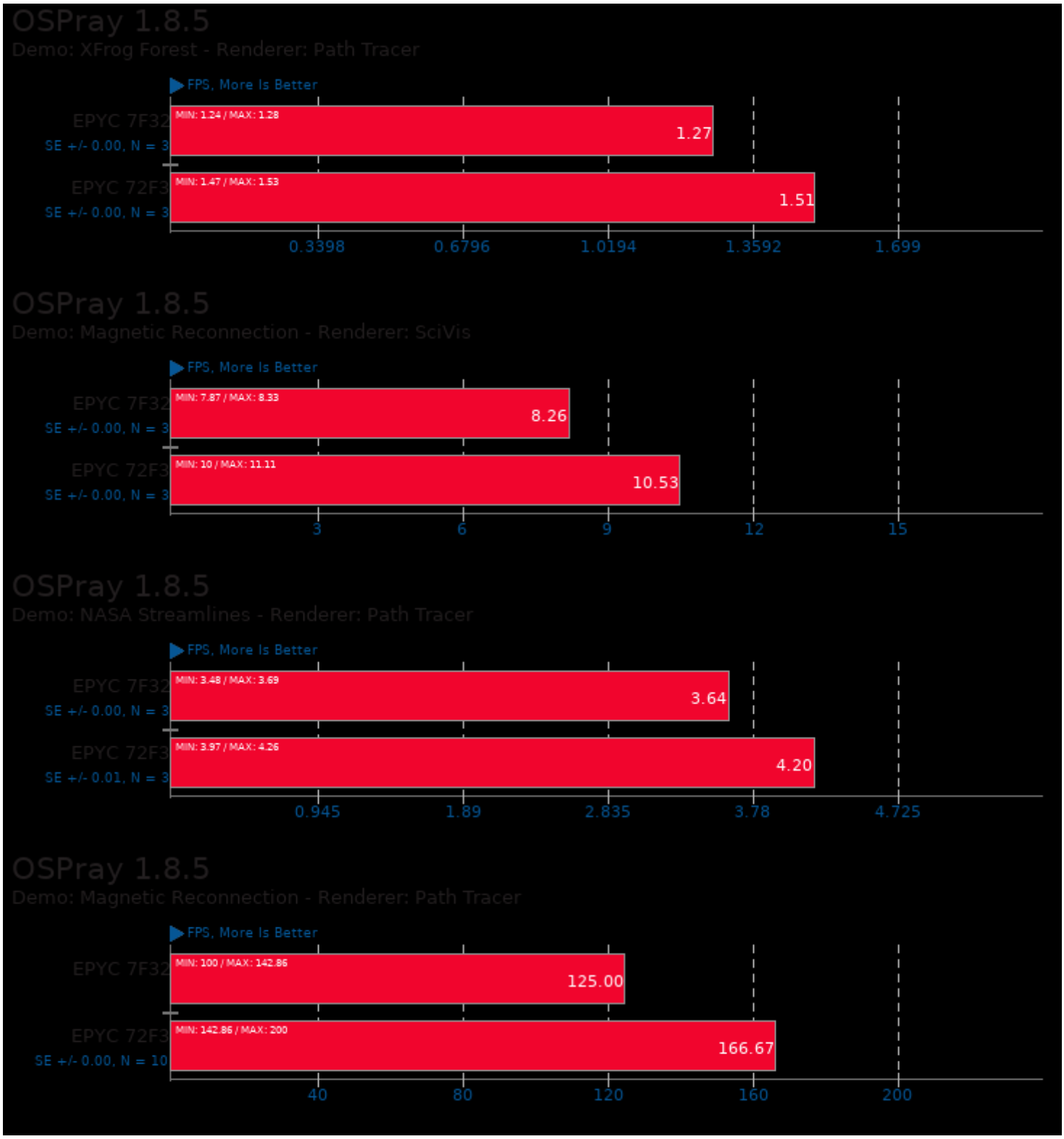
AMD EPYC 72F3 Performance Benchmarks



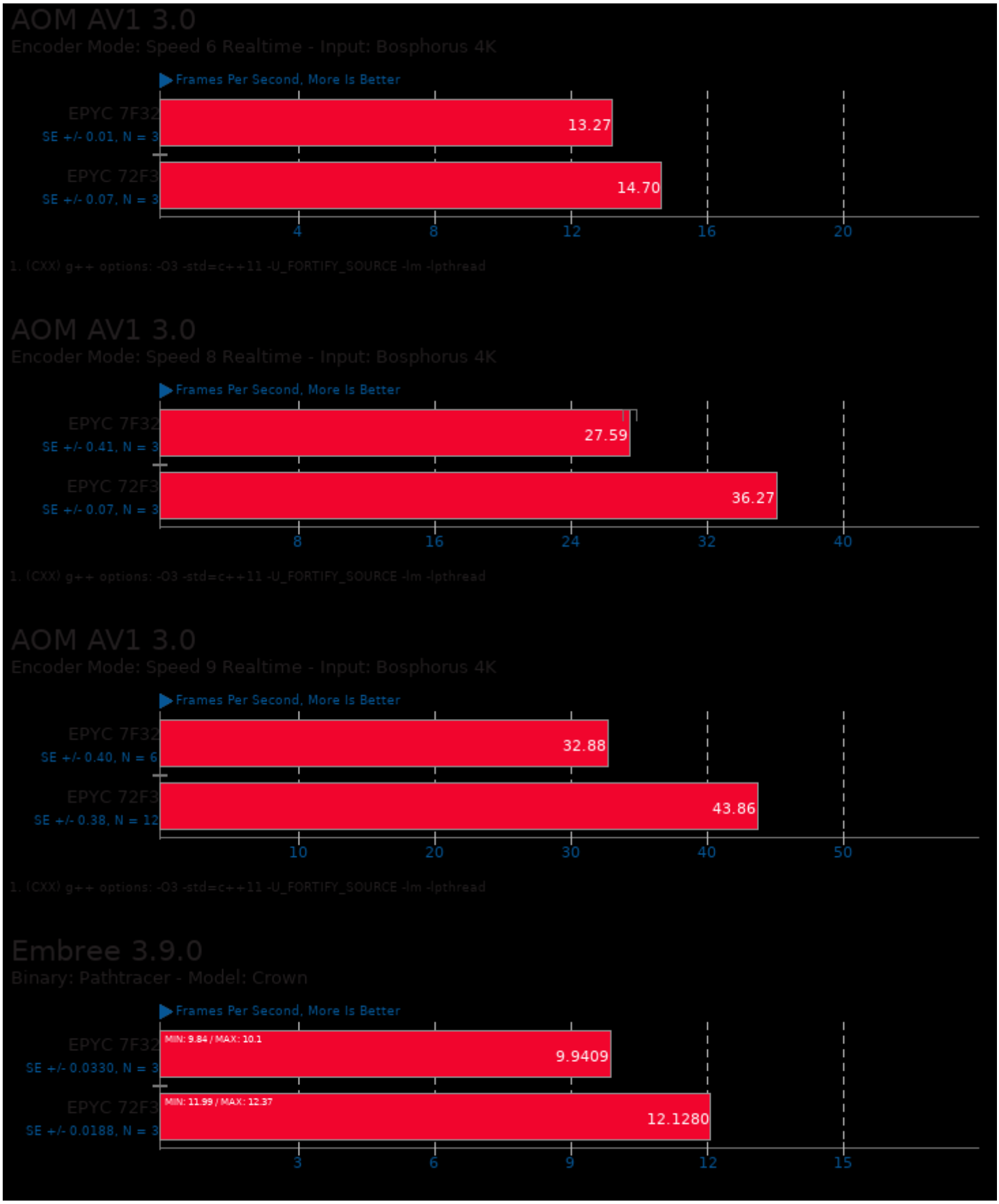
AMD EPYC 72F3 Performance Benchmarks



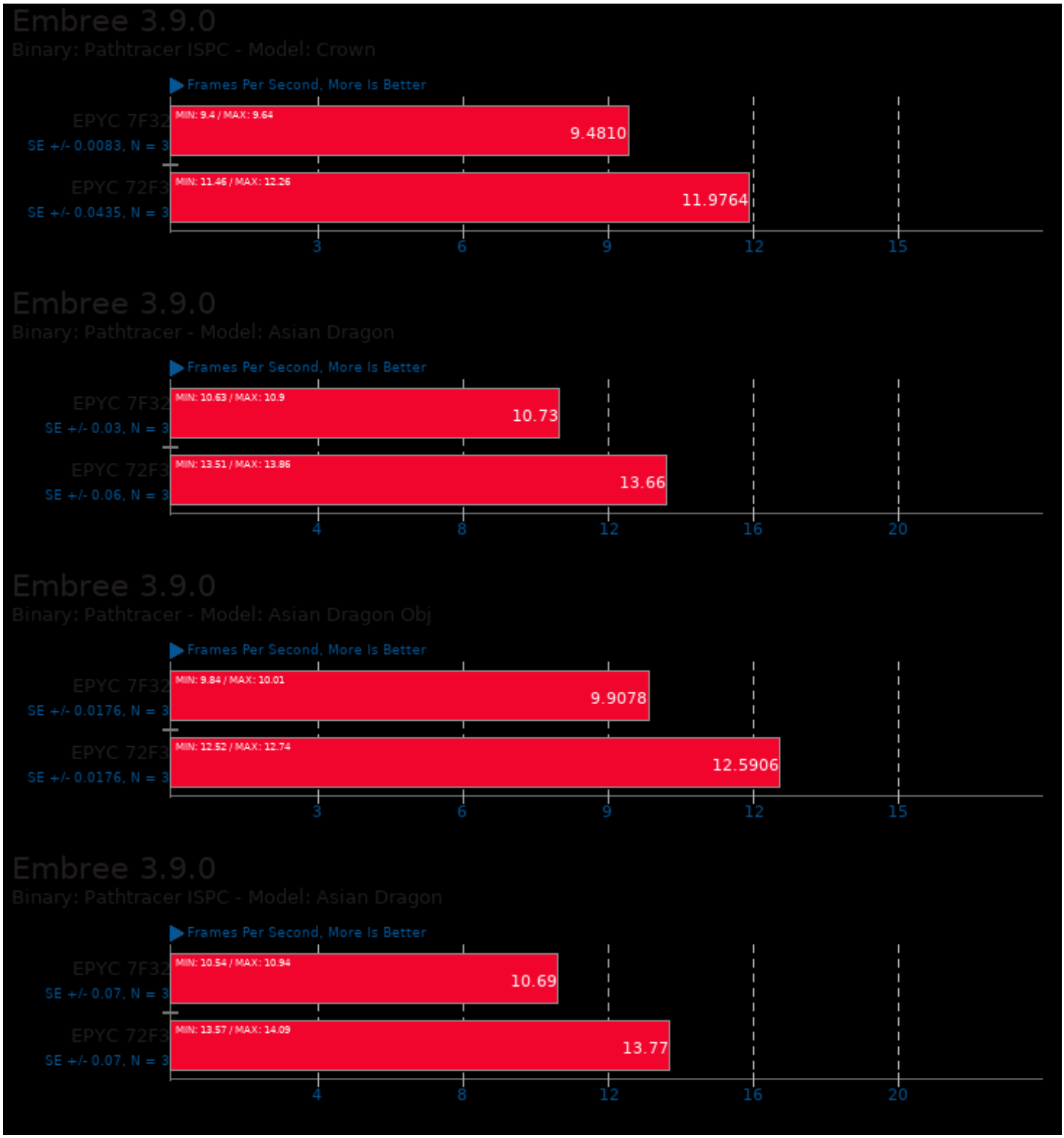
AMD EPYC 72F3 Performance Benchmarks



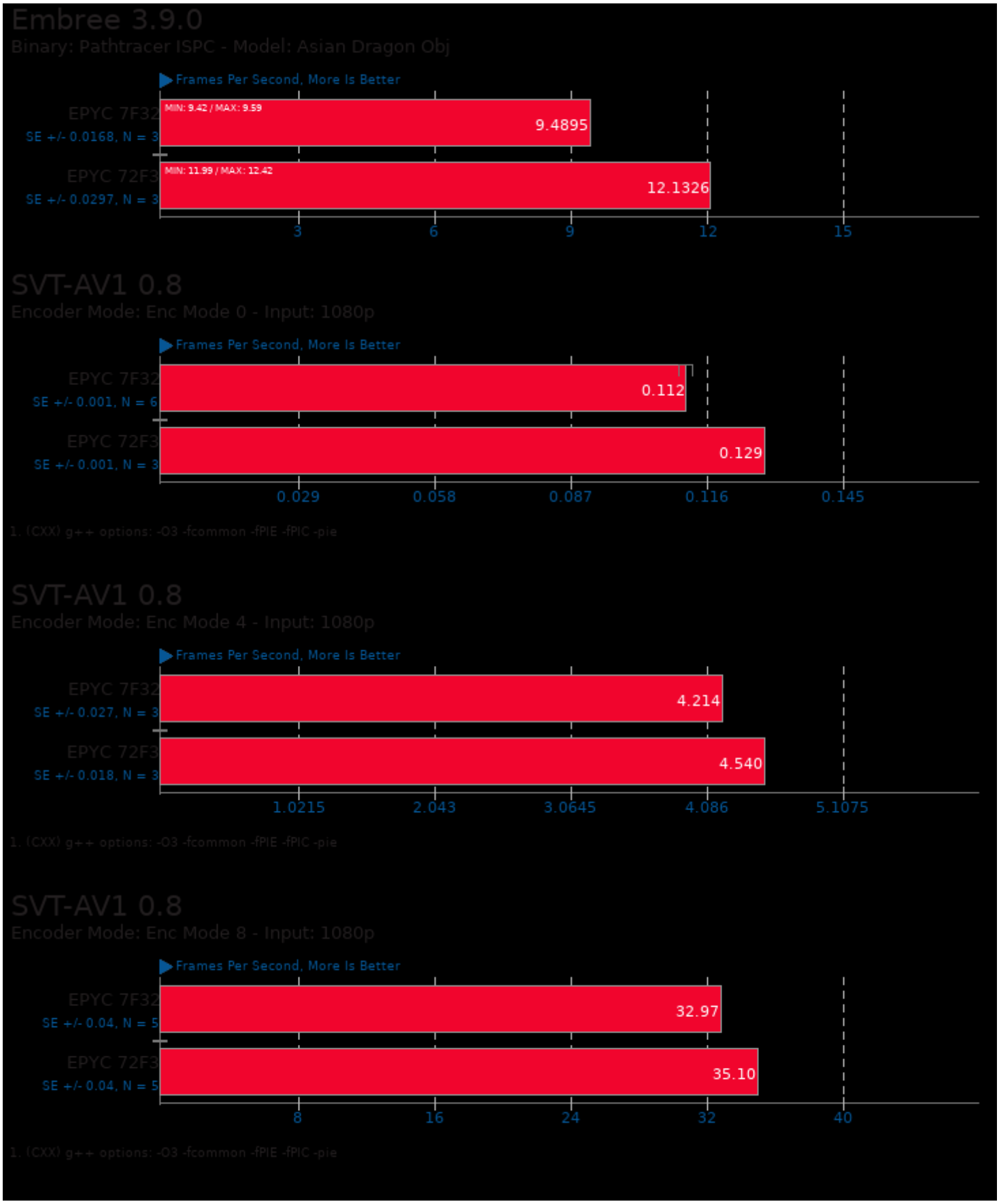
AMD EPYC 72F3 Performance Benchmarks



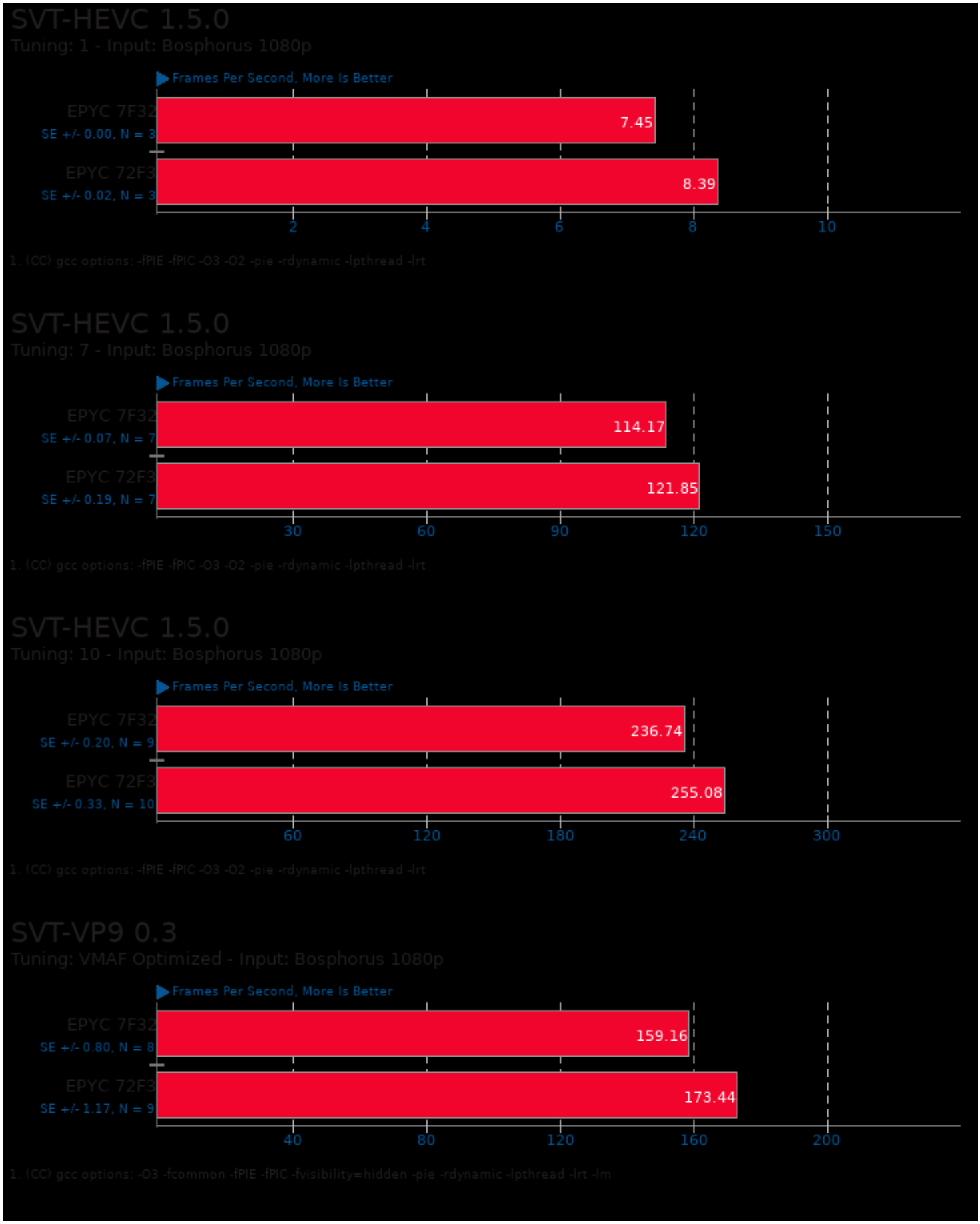
AMD EPYC 72F3 Performance Benchmarks



AMD EPYC 72F3 Performance Benchmarks



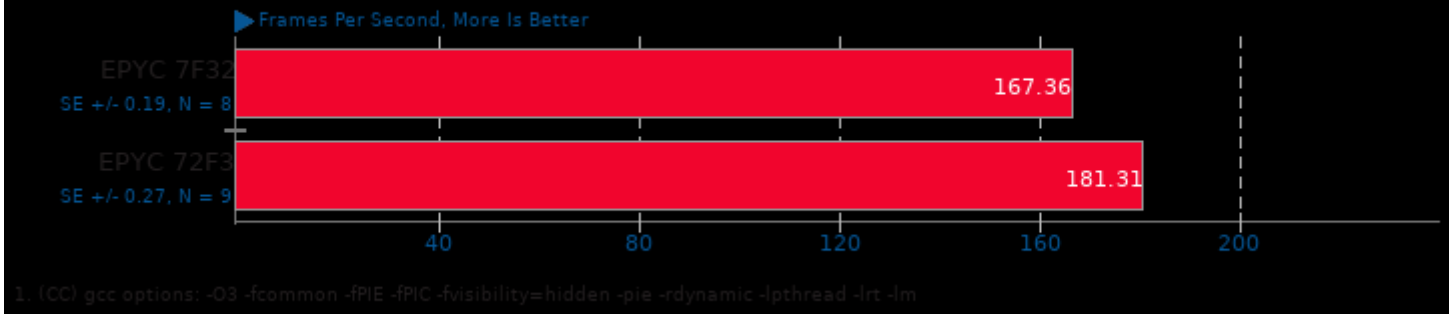
AMD EPYC 72F3 Performance Benchmarks



AMD EPYC 72F3 Performance Benchmarks

SVT-VP9 0.3

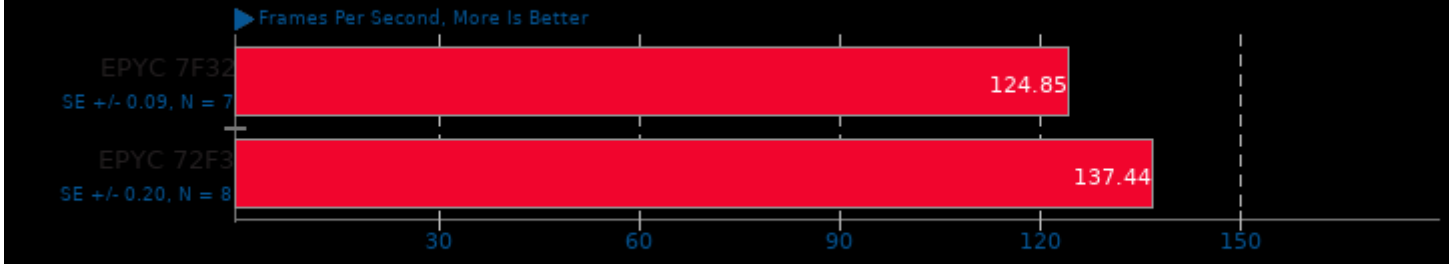
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.3

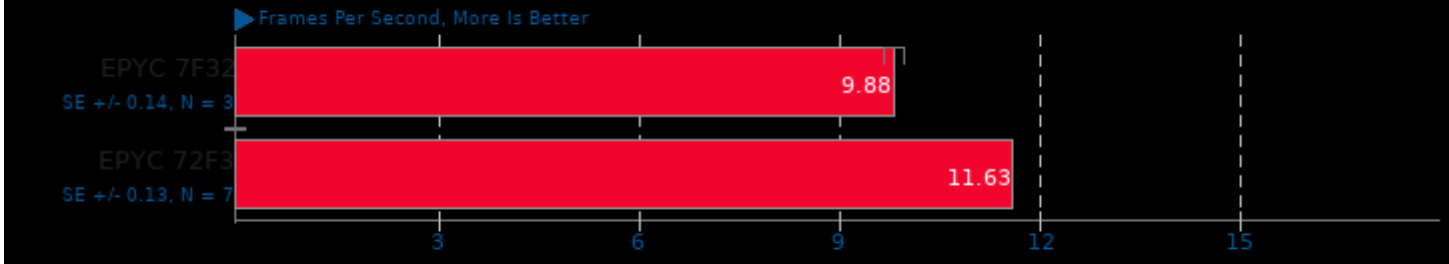
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

x265 3.4

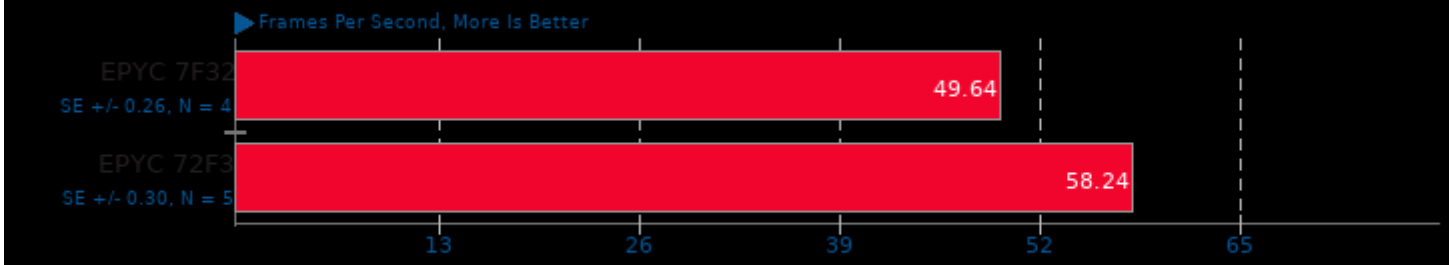
Video Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

x265 3.4

Video Input: Bosphorus 1080p

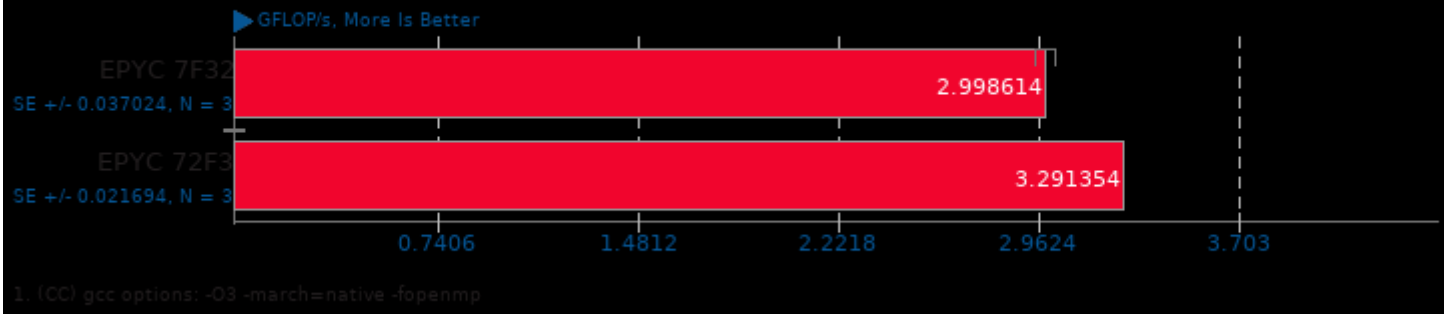


1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

AMD EPYC 72F3 Performance Benchmarks

ACES DGEMM 1.0

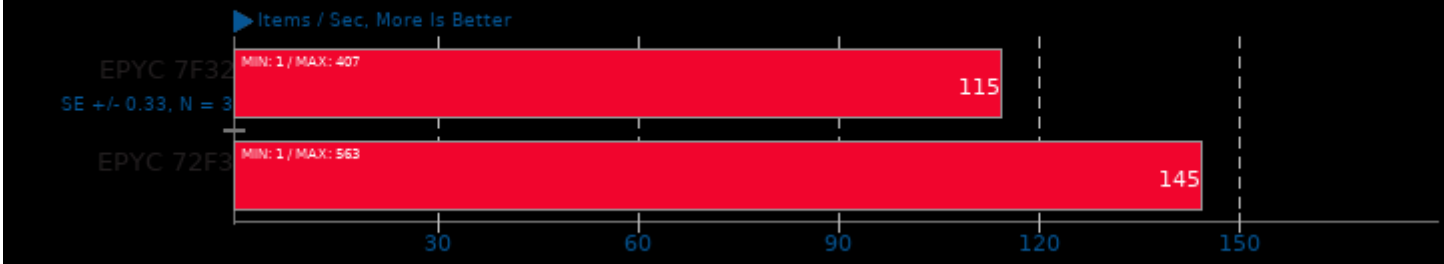
Sustained Floating-Point Rate



1. (CC) gcc options: -O3 -march=native -fopenmp

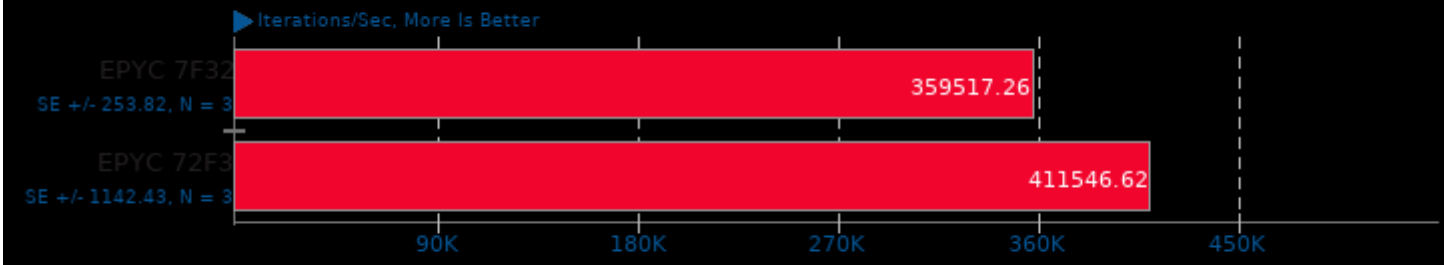
OpenVKL 0.9

Benchmark: vklBenchmark



Coremark 1.0

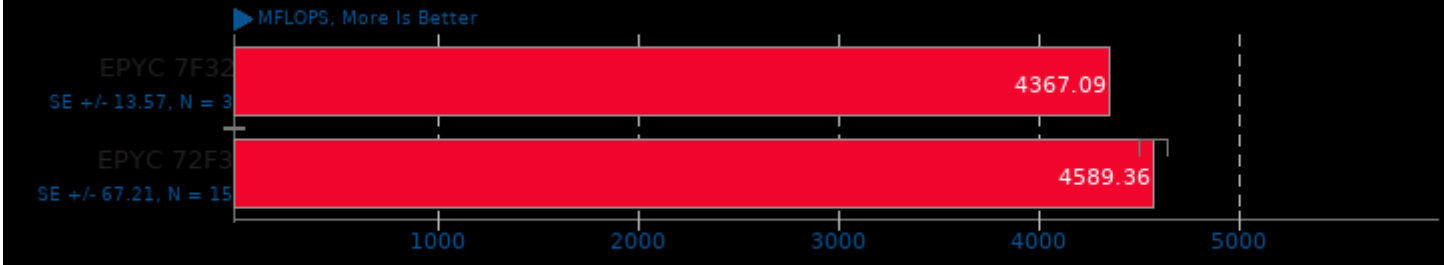
CoreMark Size 666 - Iterations Per Second



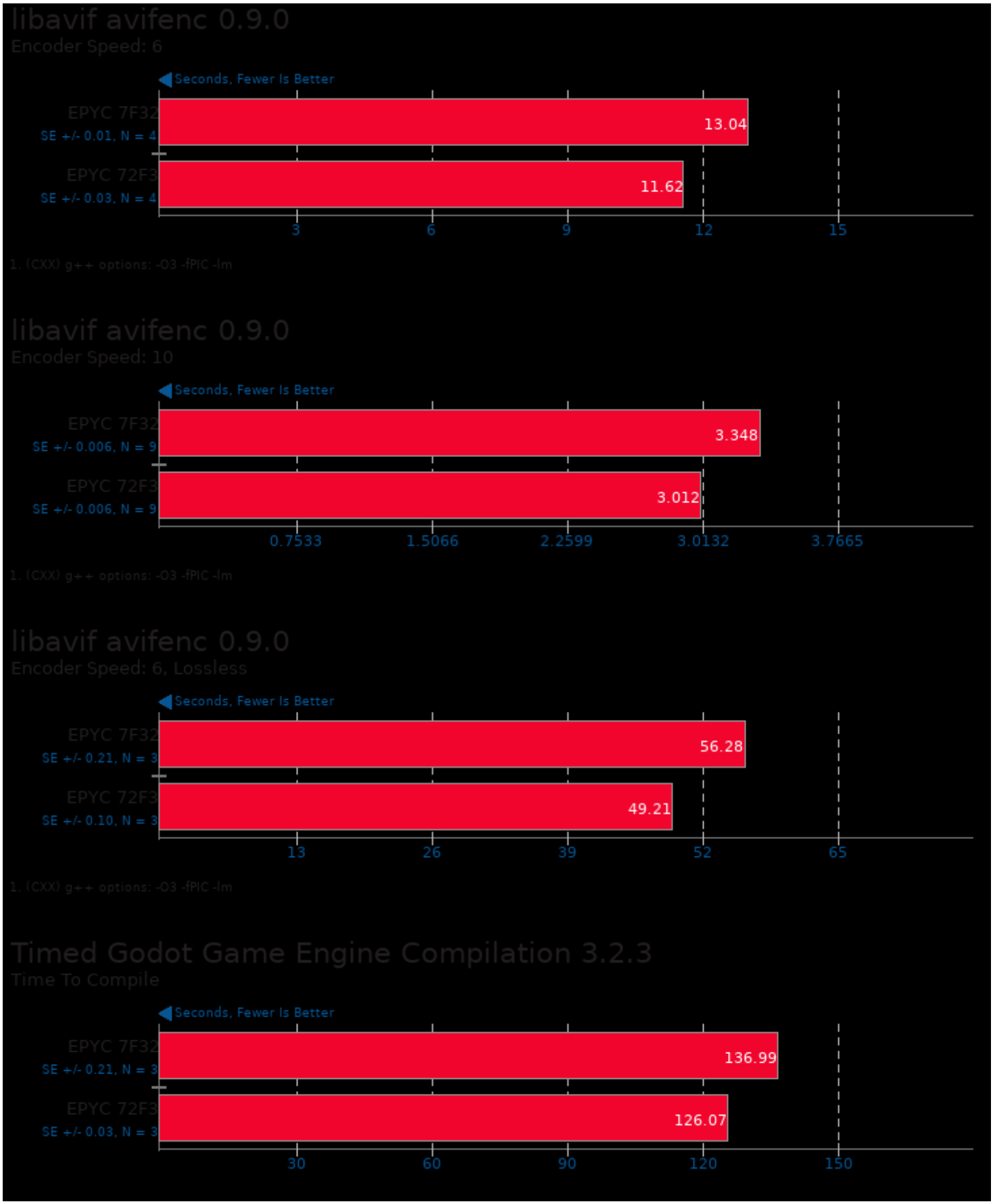
1. (CC) gcc options: -O2 -lrt" -lrt

Himeno Benchmark 3.0

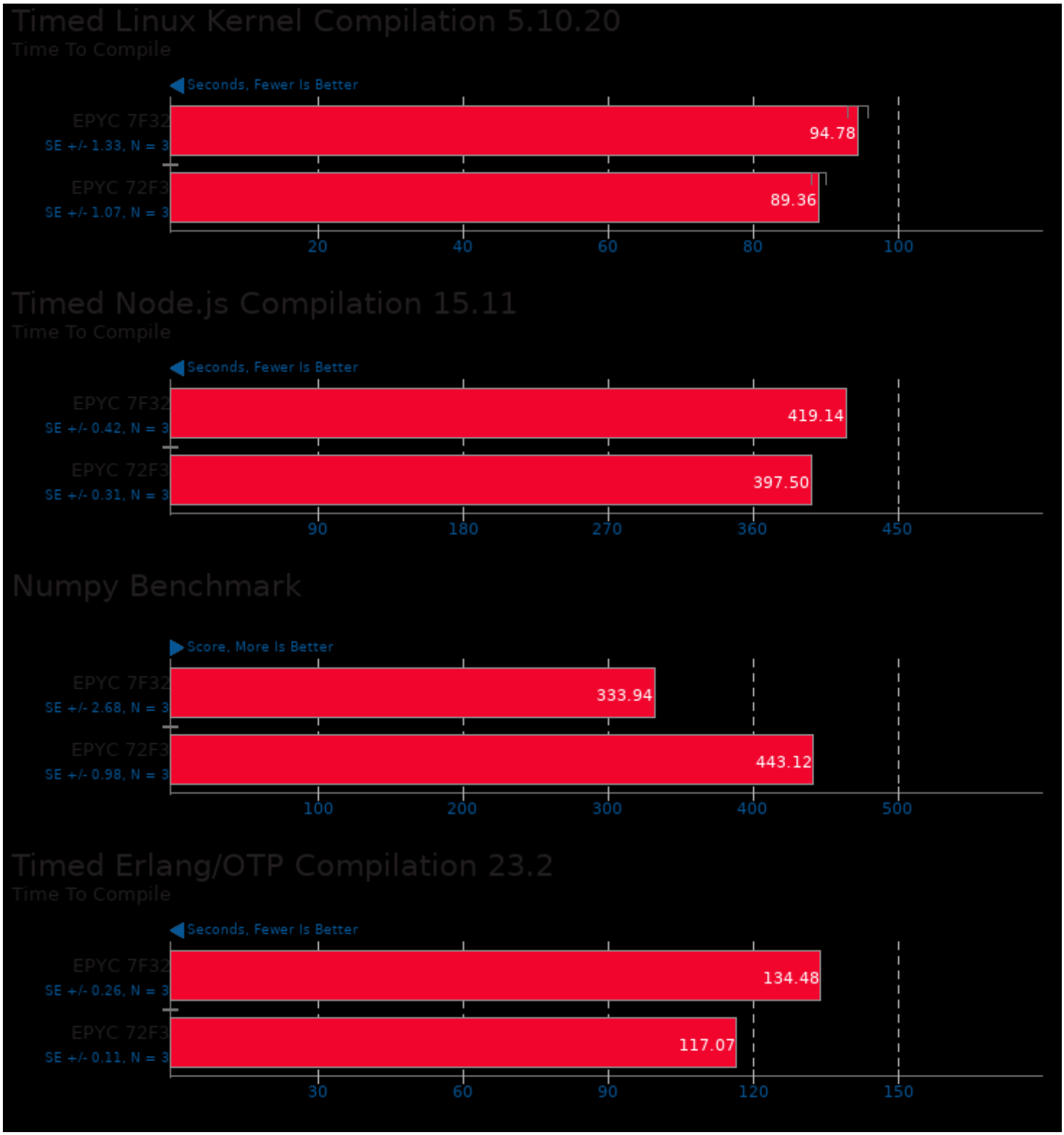
Poisson Pressure Solver



1. (CC) gcc options: -O3 -mavx2

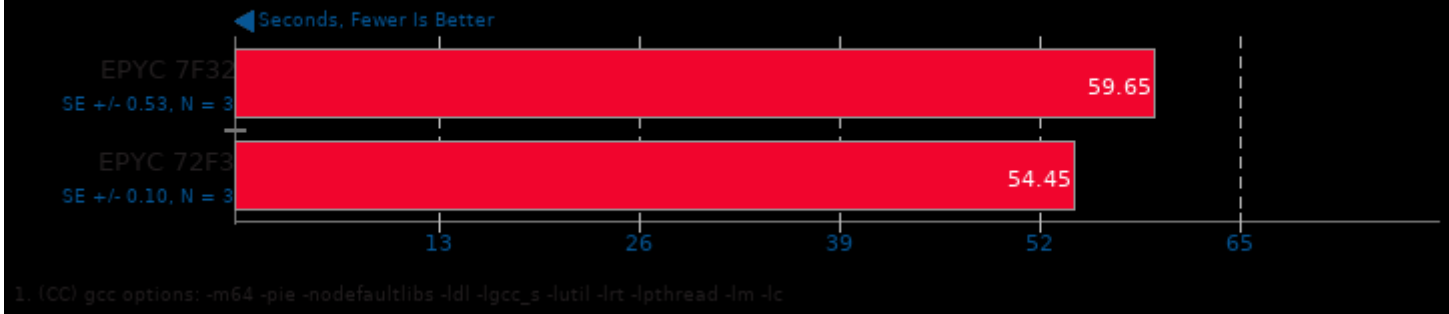

libavif avifenc 0.9.0
Encoder Speed: 6
Seconds, Fewer Is Better
EPYC 7F32
SE +/- 0.01, N = 4
13.04
EPYC 72F3
SE +/- 0.03, N = 4
11.62
3
6
9
12
15
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.9.0
Encoder Speed: 10
Seconds, Fewer Is Better
EPYC 7F32
SE +/- 0.006, N = 9
3.348
EPYC 72F3
SE +/- 0.006, N = 9
3.012
0.7533
1.5066
2.2599
3.0132
3.7665
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.9.0
Encoder Speed: 6, Lossless
Seconds, Fewer Is Better
EPYC 7F32
SE +/- 0.21, N = 3
56.28
EPYC 72F3
SE +/- 0.10, N = 3
49.21
13
26
39
52
65
1. (CXX) g++ options: -O3 -fPIC -lm
Timed Godot Game Engine Compilation 3.2.3
Time To Compile
Seconds, Fewer Is Better
EPYC 7F32
SE +/- 0.21, N = 3
136.99
EPYC 72F3
SE +/- 0.03, N = 3
126.07
30
60
90
120
150

AMD EPYC 72F3 Performance Benchmarks



Timed Wasmer Compilation 1.0.2

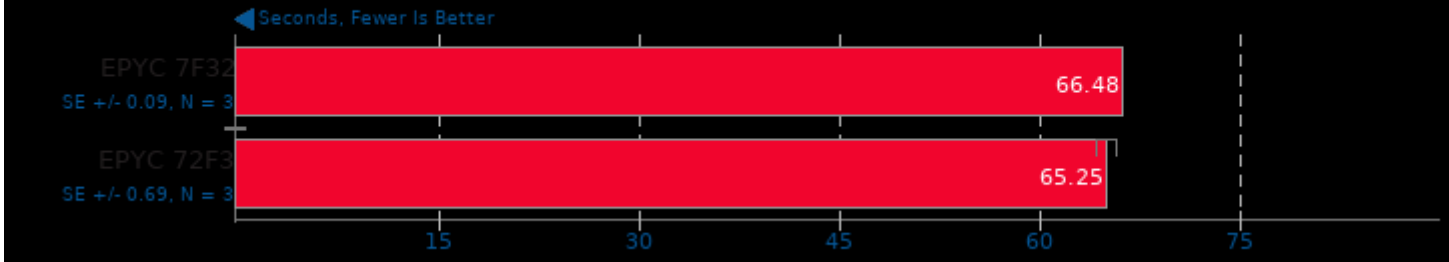
Time To Compile



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lgcc_s -lutil -lrt -lpthread -lm -lc

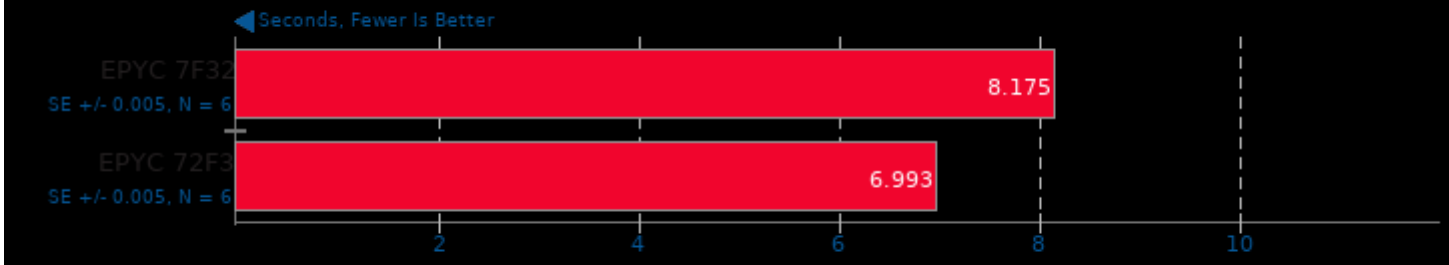
DeepSpeech 0.6

Acceleration: CPU



FLAC Audio Encoding 1.3.2

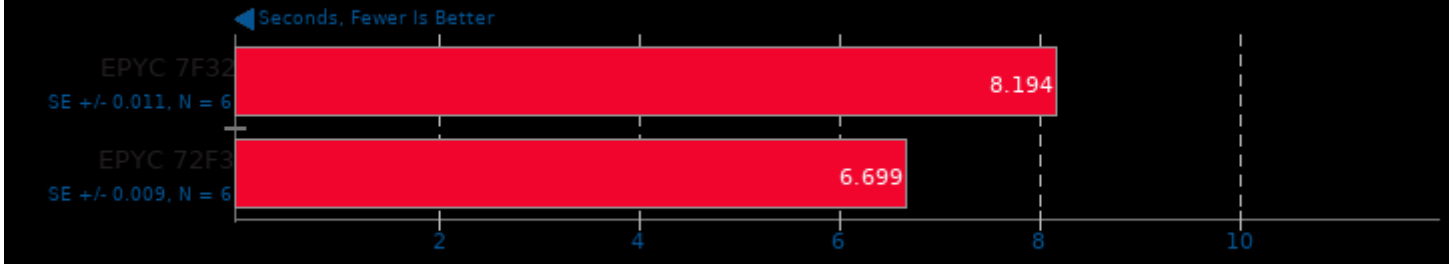
WAV To FLAC



1. (CXX) g++ options: -O2 -fvisibility=hidden -logg -lm

LAME MP3 Encoding 3.100

WAV To MP3

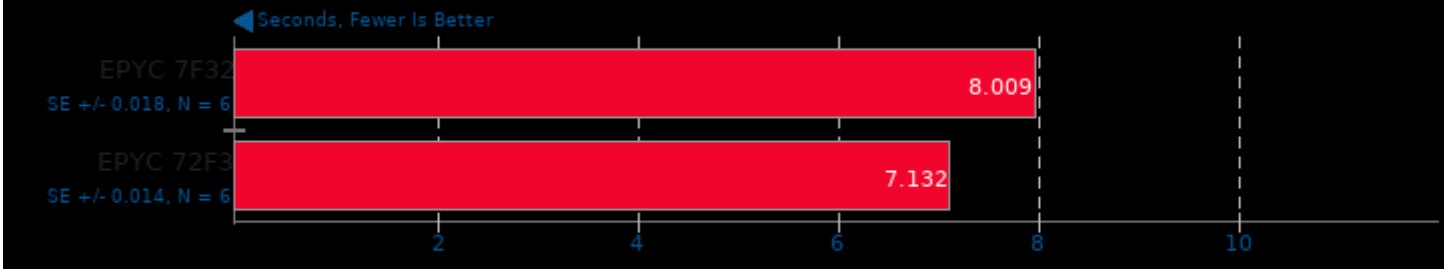


1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -lncurses -lm

AMD EPYC 72F3 Performance Benchmarks

Opus Codec Encoding 1.3.1

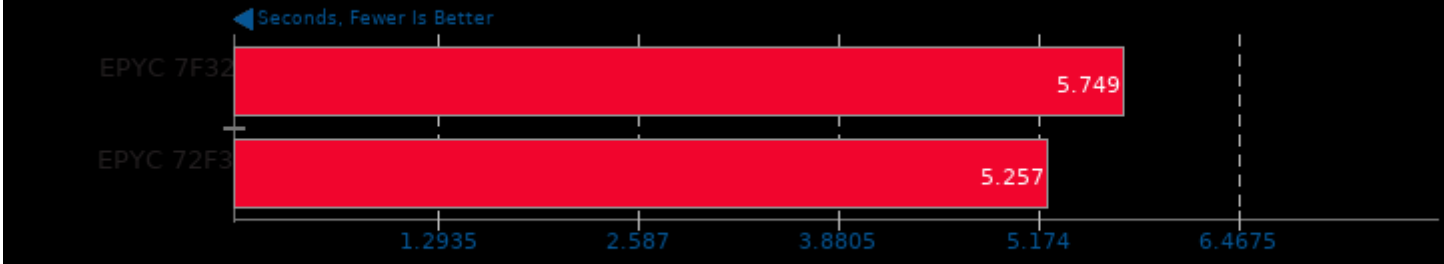
WAV To Opus Encode



1. (CXX) g++ options: -fvisibility=hidden -logg -lm

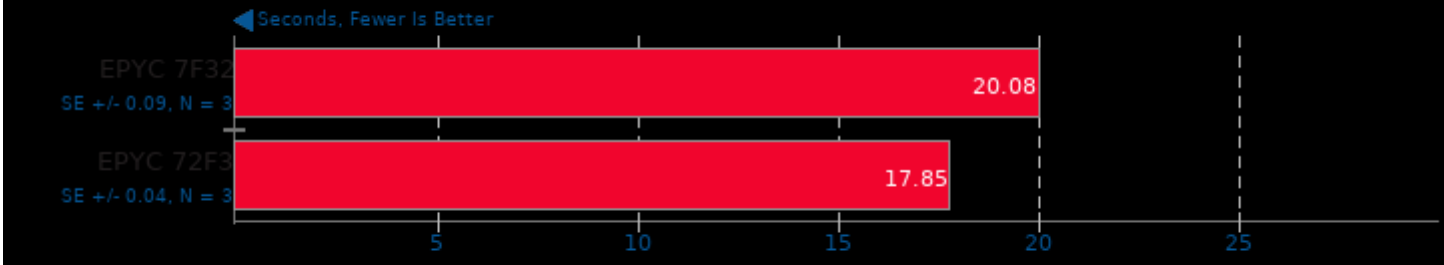
Helsing 1.0-beta

Digit Range: 12 digit



1. (CC) gcc options: -O2 -pthread -lcrypto

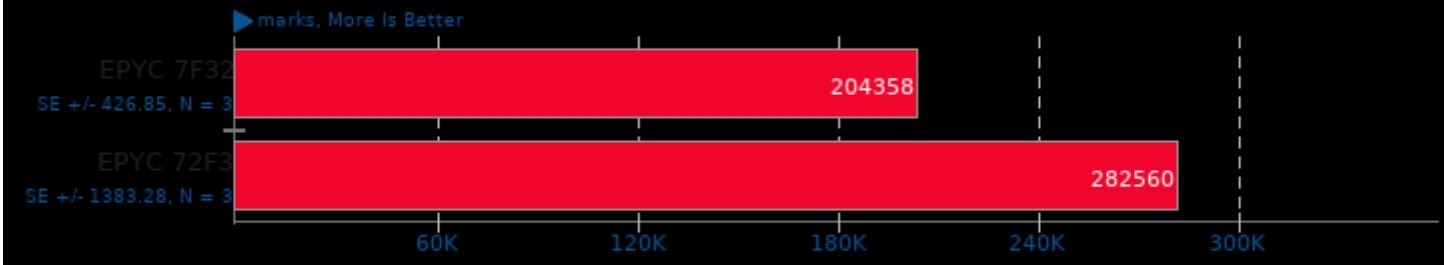
RNNoise 2020-06-28



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

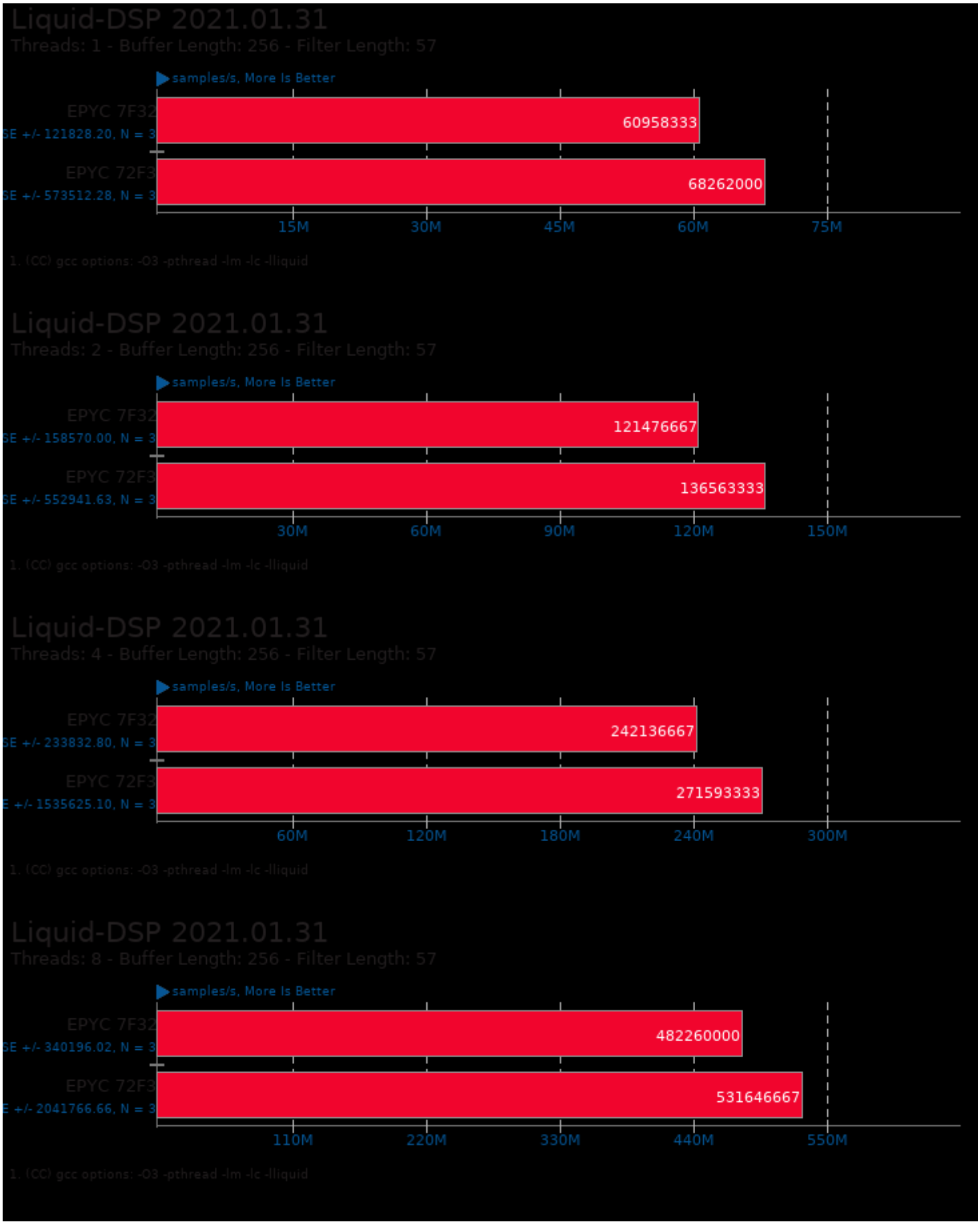
SecureMark 1.0.4

Benchmark: SecureMark-TLS



1. (CC) gcc options: -pedantic -O3

AMD EPYC 72F3 Performance Benchmarks




Liquid-DSP 2021.01.31
Threads: 16 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
EPYC 7F32
E +/- 7998346.36, N = 3
525046667
EPYC 72F3
SE +/- 355027.39, N = 3
593886667
130M
260M
390M
520M
650M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid
ASKAP 1.0
Test: tConvolve MT - Gridding
Million Grid Points Per Second, More Is Better
EPYC 7F32
SE +/- 17.33, N = 3
3668.44
EPYC 72F3
SE +/- 64.72, N = 3
5522.14
1200
2400
3600
4800
6000
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve MT - Degridding
Million Grid Points Per Second, More Is Better
EPYC 7F32
SE +/- 7.69, N = 3
3744.62
EPYC 72F3
SE +/- 34.90, N = 3
4950.26
1100
2200
3300
4400
5500
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve MPI - Gridding
Mpix/sec, More Is Better
EPYC 7F32
SE +/- 108.48, N = 4
7665.74
EPYC 72F3
SE +/- 64.79, N = 5
8358.57
2K
4K
6K
8K
10K
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

AMD EPYC 72F3 Performance Benchmarks

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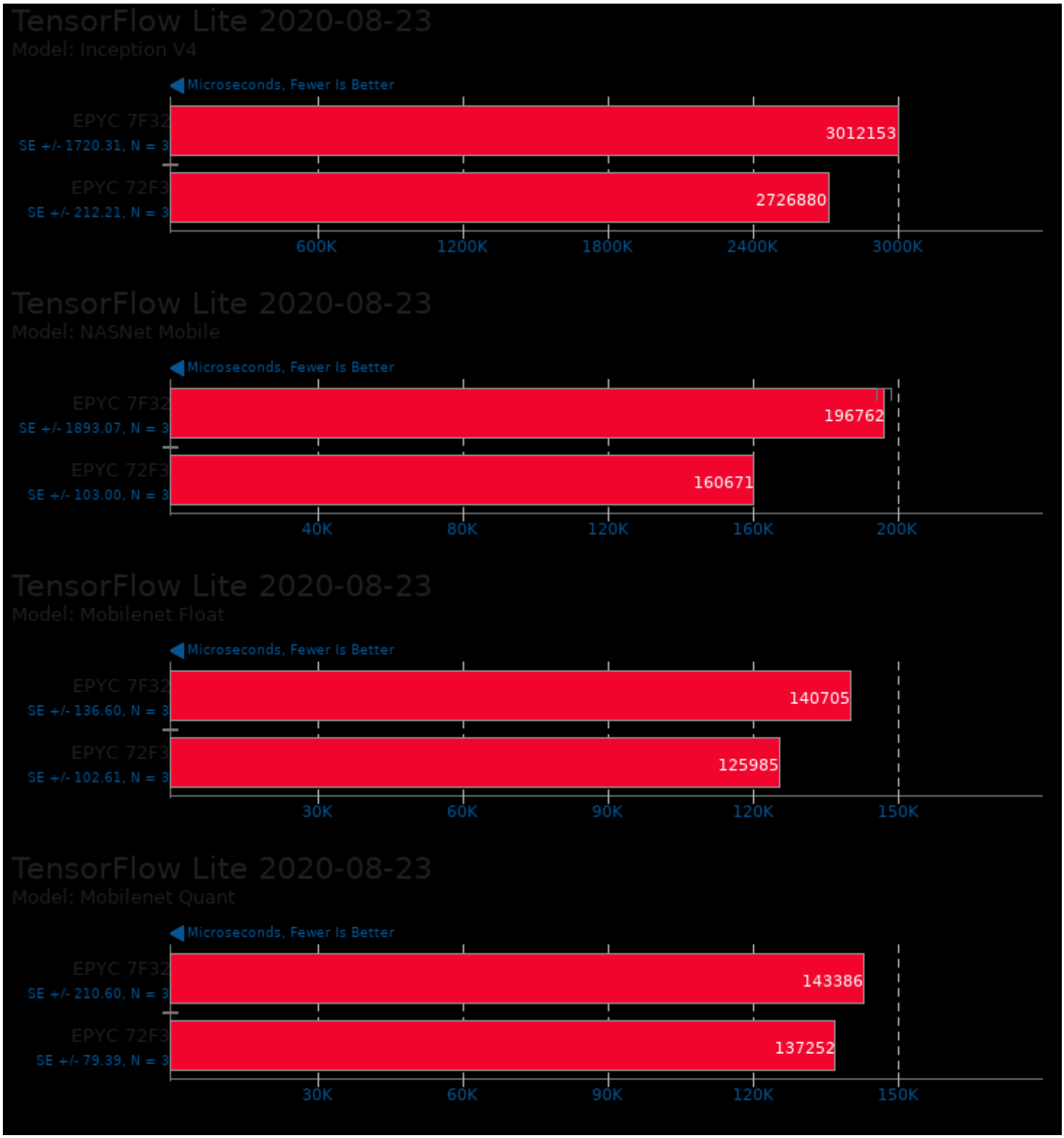
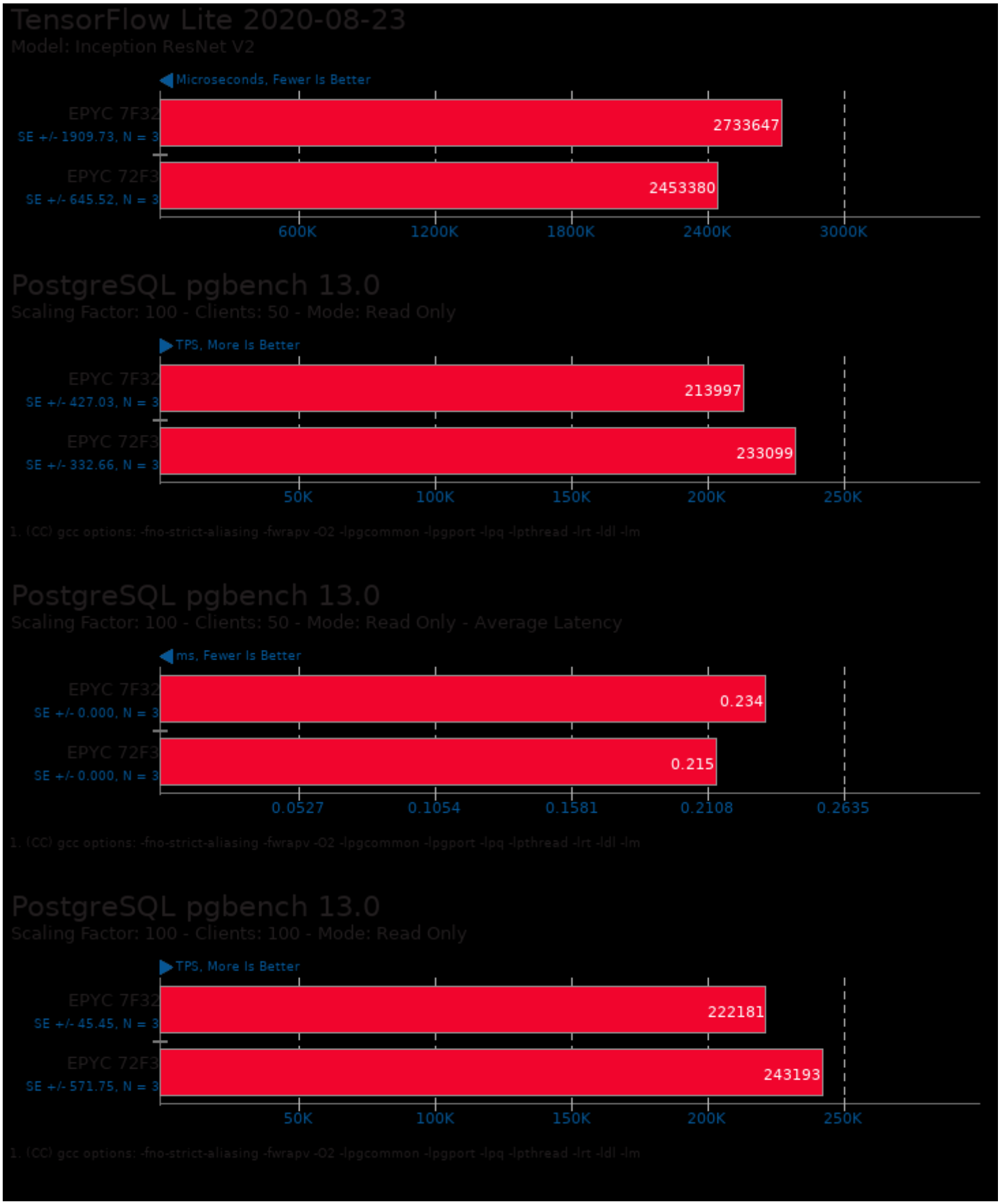
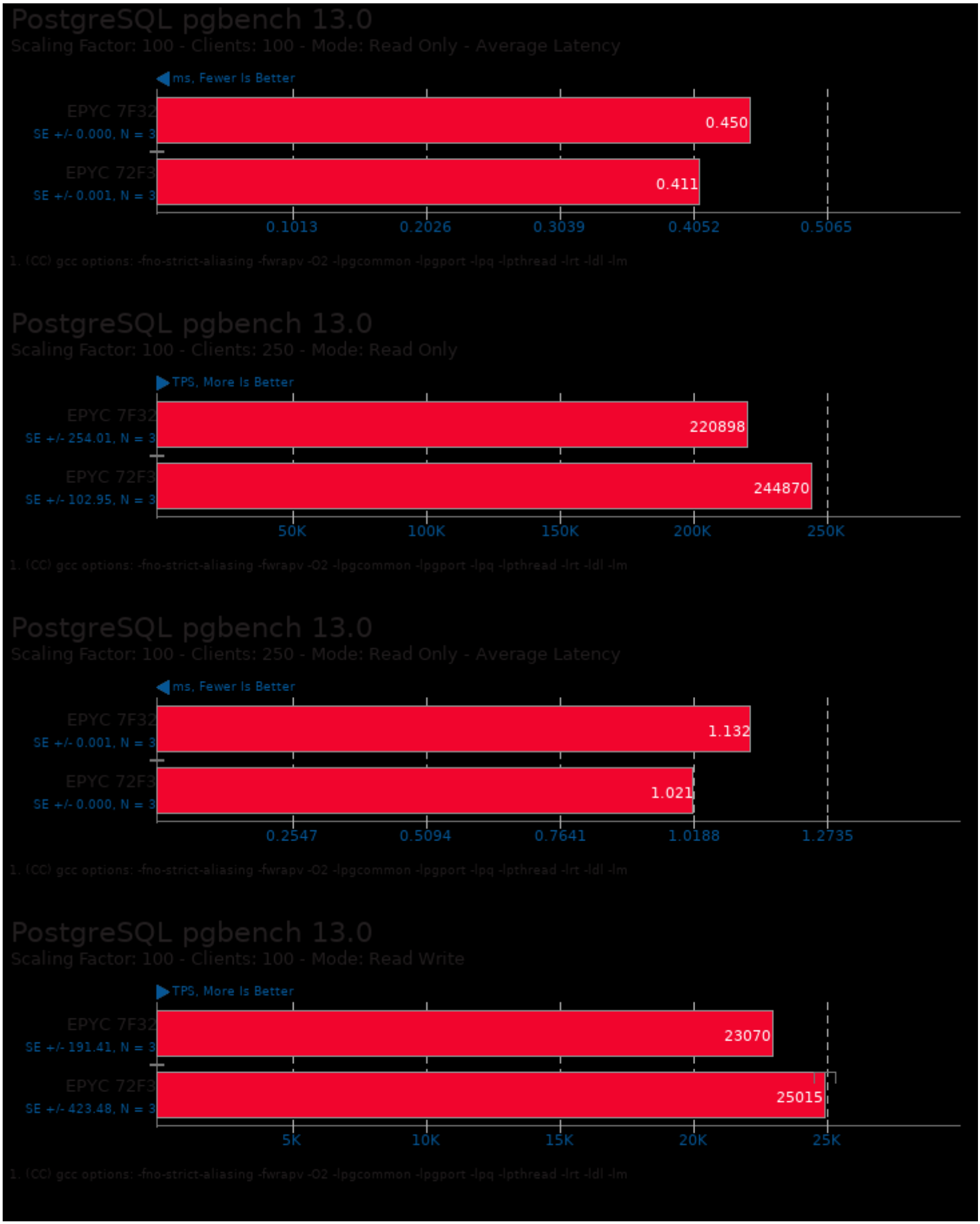


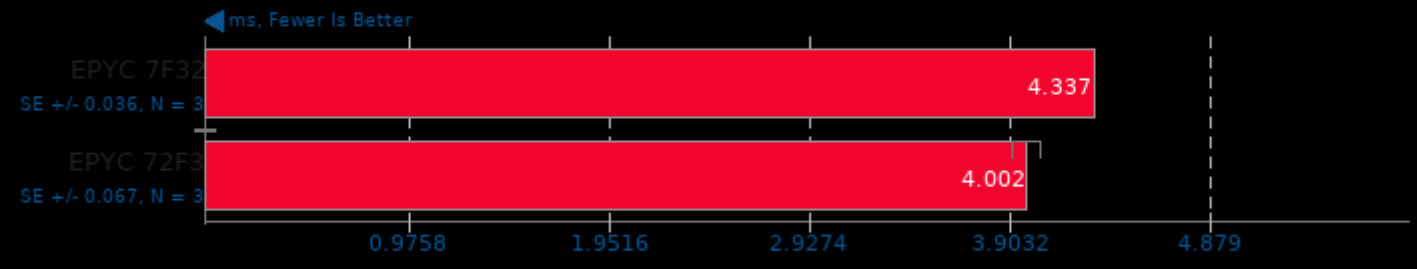

TensorFlow Lite 2020-08-23
Model: Inception ResNet V2
Microseconds, Fewer Is Better
EPYC 7F32
SE +/- 1909.73, N = 3
2733647
EPYC 72F3
SE +/- 645.52, N = 3
2453380
600K
1200K
1800K
2400K
3000K
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Only
TPS, More Is Better
EPYC 7F32
SE +/- 427.03, N = 3
213997
EPYC 72F3
SE +/- 332.66, N = 3
233099
50K
100K
150K
200K
250K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Only - Average Latency
ms, Fewer Is Better
EPYC 7F32
SE +/- 0.000, N = 3
0.234
EPYC 72F3
SE +/- 0.000, N = 3
0.215
0.0527
0.1054
0.1581
0.2108
0.2635
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Only
TPS, More Is Better
EPYC 7F32
SE +/- 45.45, N = 3
222181
EPYC 72F3
SE +/- 571.75, N = 3
243193
50K
100K
150K
200K
250K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

AMD EPYC 72F3 Performance Benchmarks



PostgreSQL pgbench 13.0

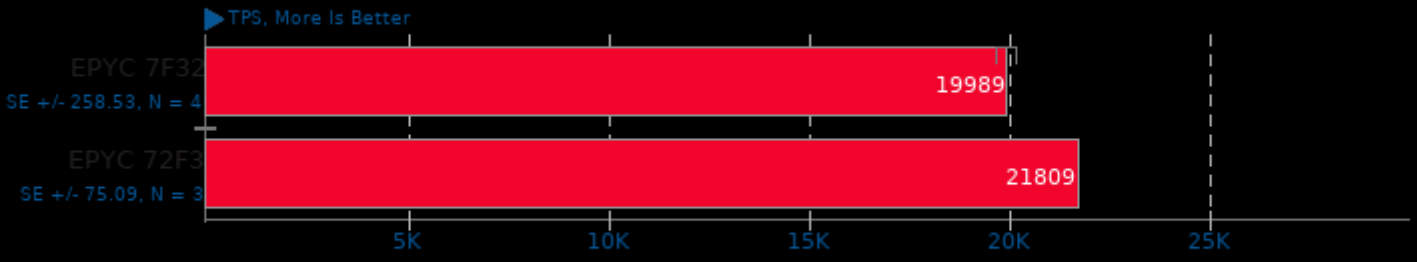
Scaling Factor: 100 - Clients: 100 - Mode: Read Write - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

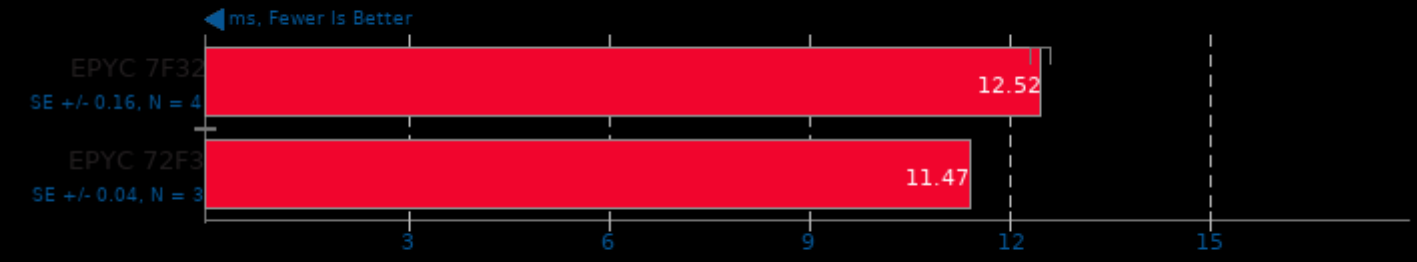
Scaling Factor: 100 - Clients: 250 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

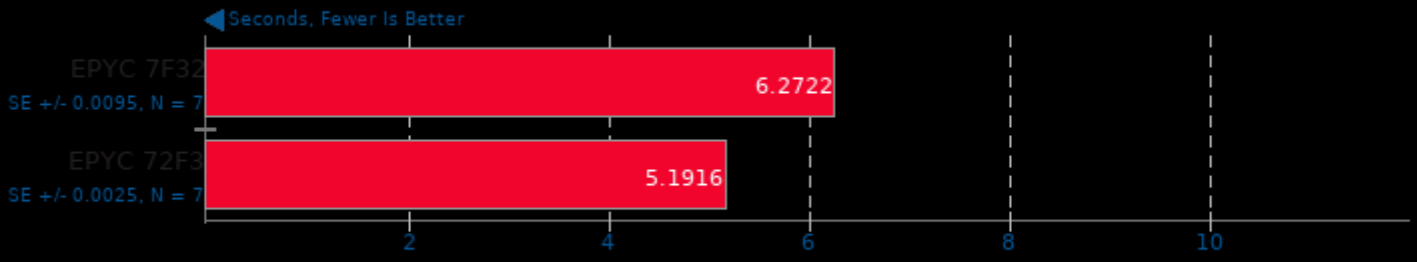
Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency



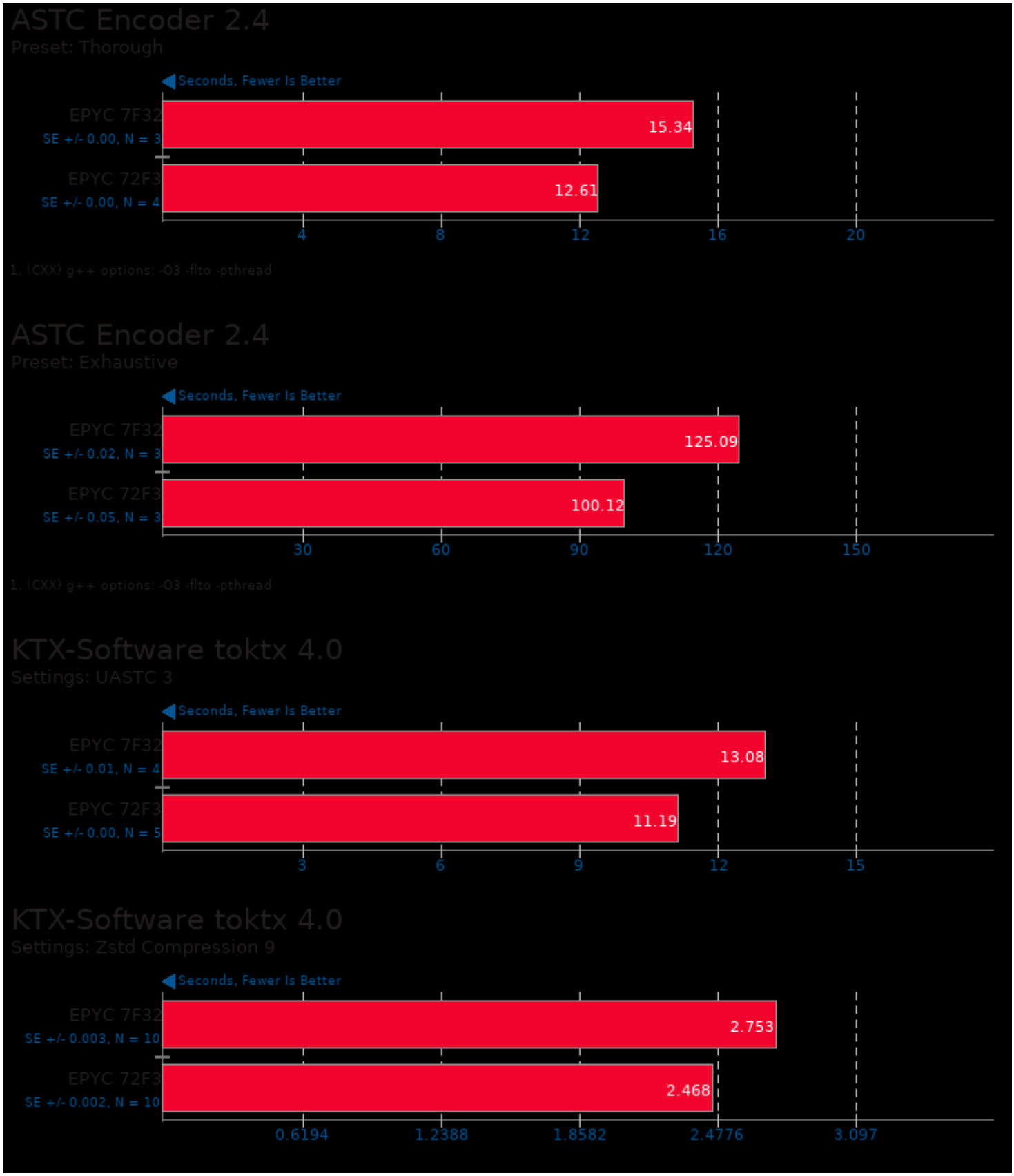
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

ASTC Encoder 2.4

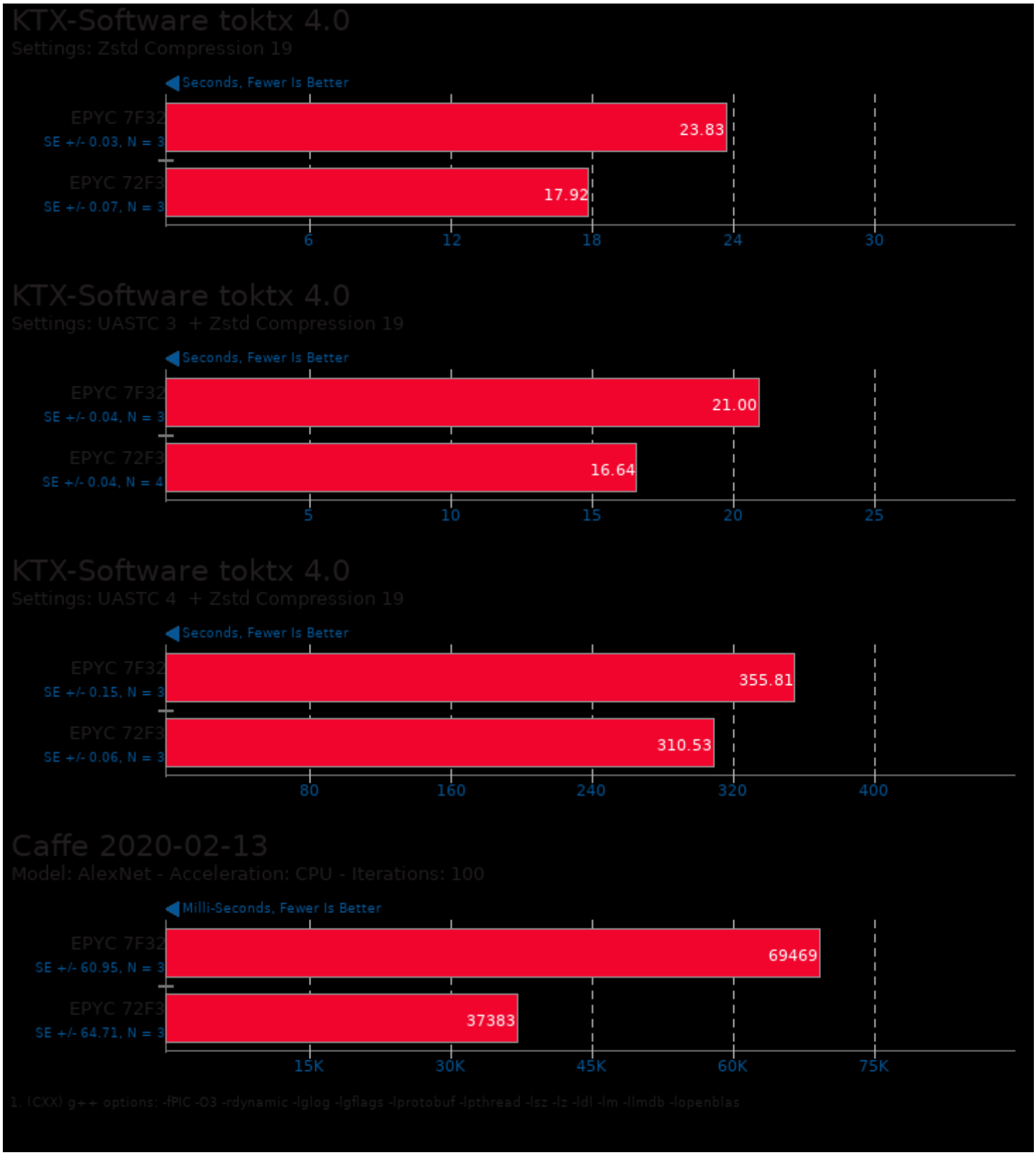
Preset: Medium



1. (CXX) g++ options: -O3 -flto -pthread


ASTC Encoder 2.4
Preset: Thorough
Seconds, Fewer Is Better
EPYC 7F32
SE +/- 0.00, N = 3
15.34
EPYC 72F3
SE +/- 0.00, N = 4
12.61
4
8
12
16
20
1. (CXX) g++ options: -O3 -flto -pthread
ASTC Encoder 2.4
Preset: Exhaustive
Seconds, Fewer Is Better
EPYC 7F32
SE +/- 0.02, N = 3
125.09
EPYC 72F3
SE +/- 0.05, N = 3
100.12
30
60
90
120
150
1. (CXX) g++ options: -O3 -flto -pthread
KTX-Software toktx 4.0
Settings: UASTC 3
Seconds, Fewer Is Better
EPYC 7F32
SE +/- 0.01, N = 4
13.08
EPYC 72F3
SE +/- 0.00, N = 5
11.19
3
6
9
12
15
KTX-Software toktx 4.0
Settings: Zstd Compression 9
Seconds, Fewer Is Better
EPYC 7F32
SE +/- 0.003, N = 10
2.753
EPYC 72F3
SE +/- 0.002, N = 10
2.468
0.6194
1.2388
1.8582
2.4776
3.097

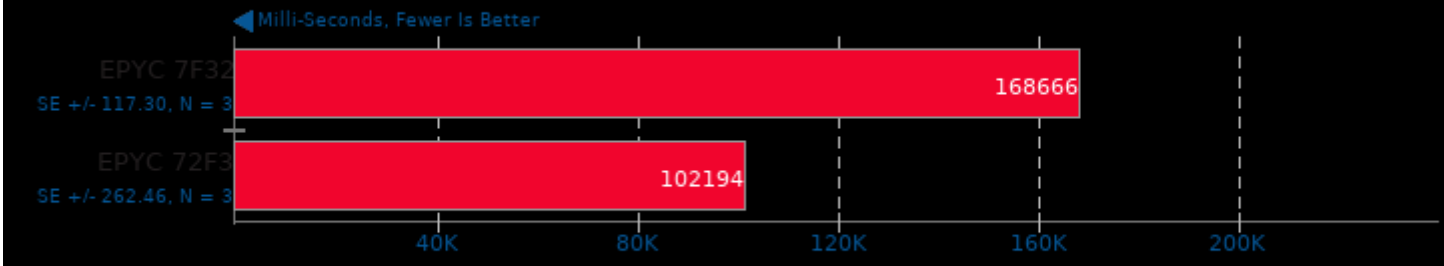
AMD EPYC 72F3 Performance Benchmarks



AMD EPYC 72F3 Performance Benchmarks

Caffe 2020-02-13

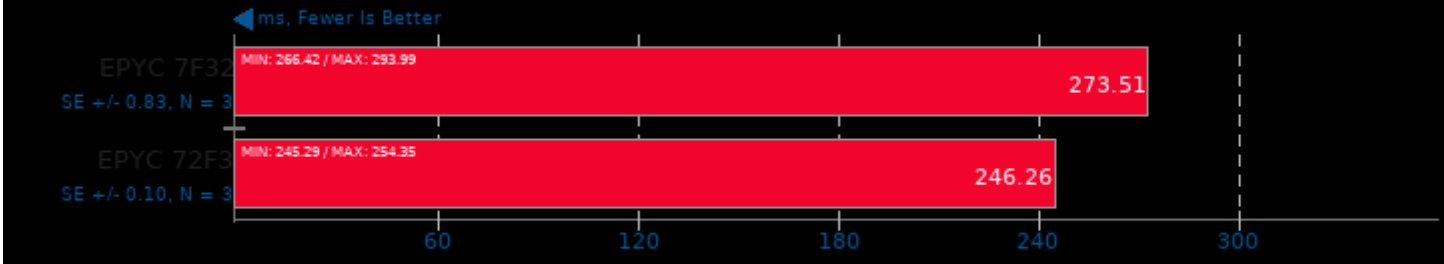
Model: GoogleNet - Acceleration: CPU - Iterations: 100



1. (CXX) g++ options: -fPIC -O3 -rdynamic -lglog -lgflags -lprotobuf -lpthread -lsz -lz -ldl -lm -llmdb -lopenblas

TNN 0.2.3

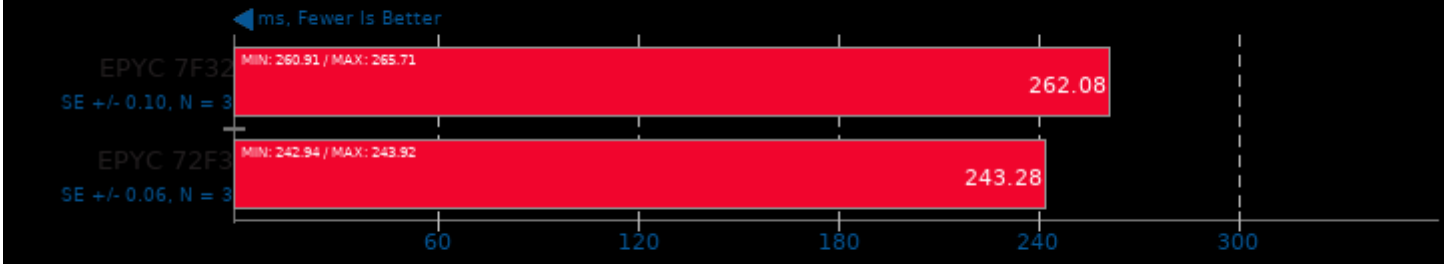
Target: CPU - Model: MobileNet v2



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -O3 -rdynamic -ldl

TNN 0.2.3

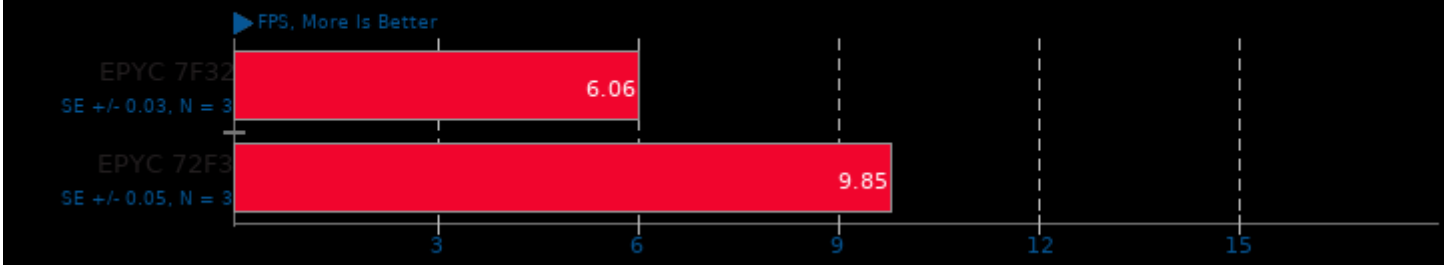
Target: CPU - Model: SqueezeNet v1.1



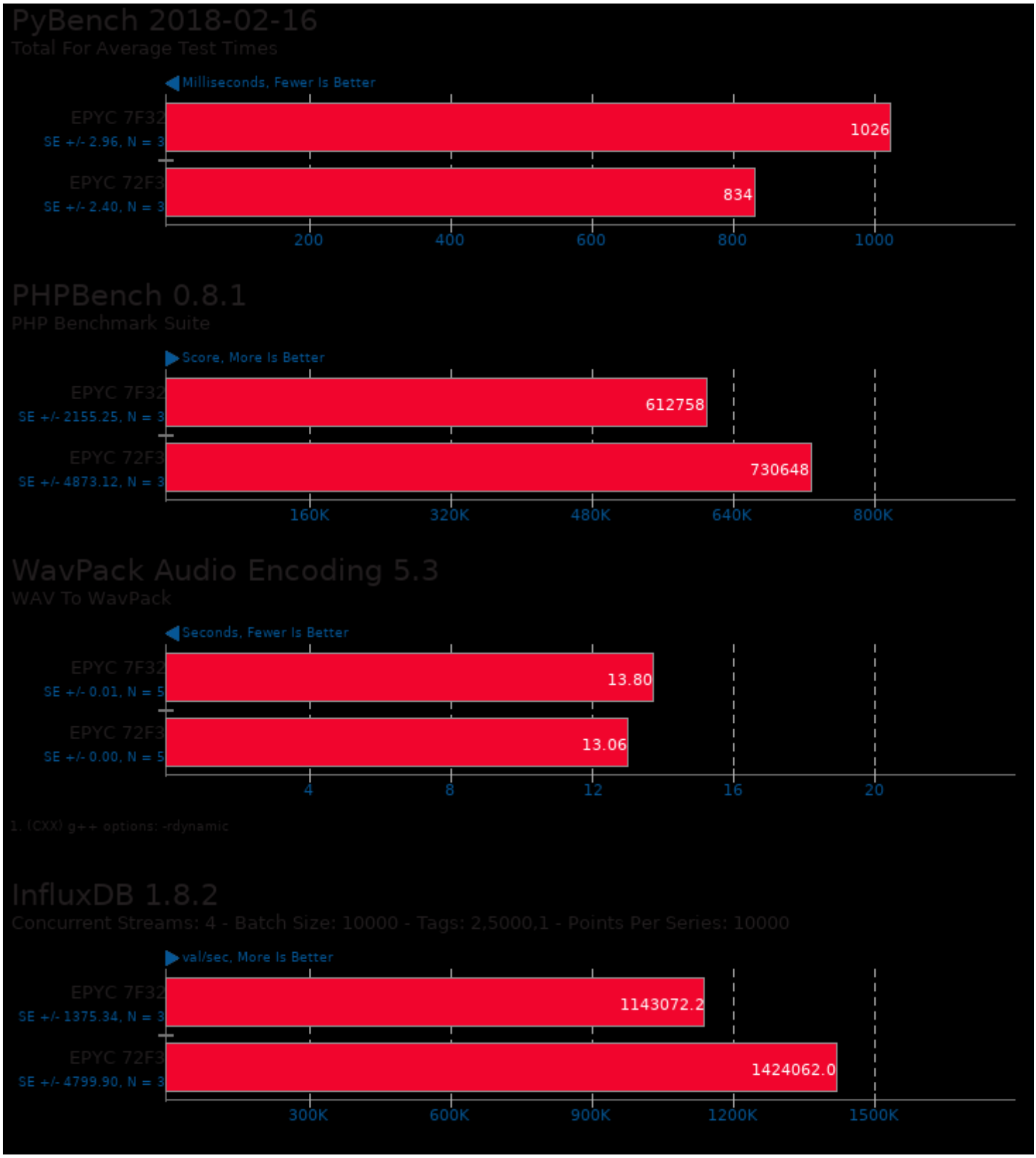
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -O3 -rdynamic -ldl

PlaidML

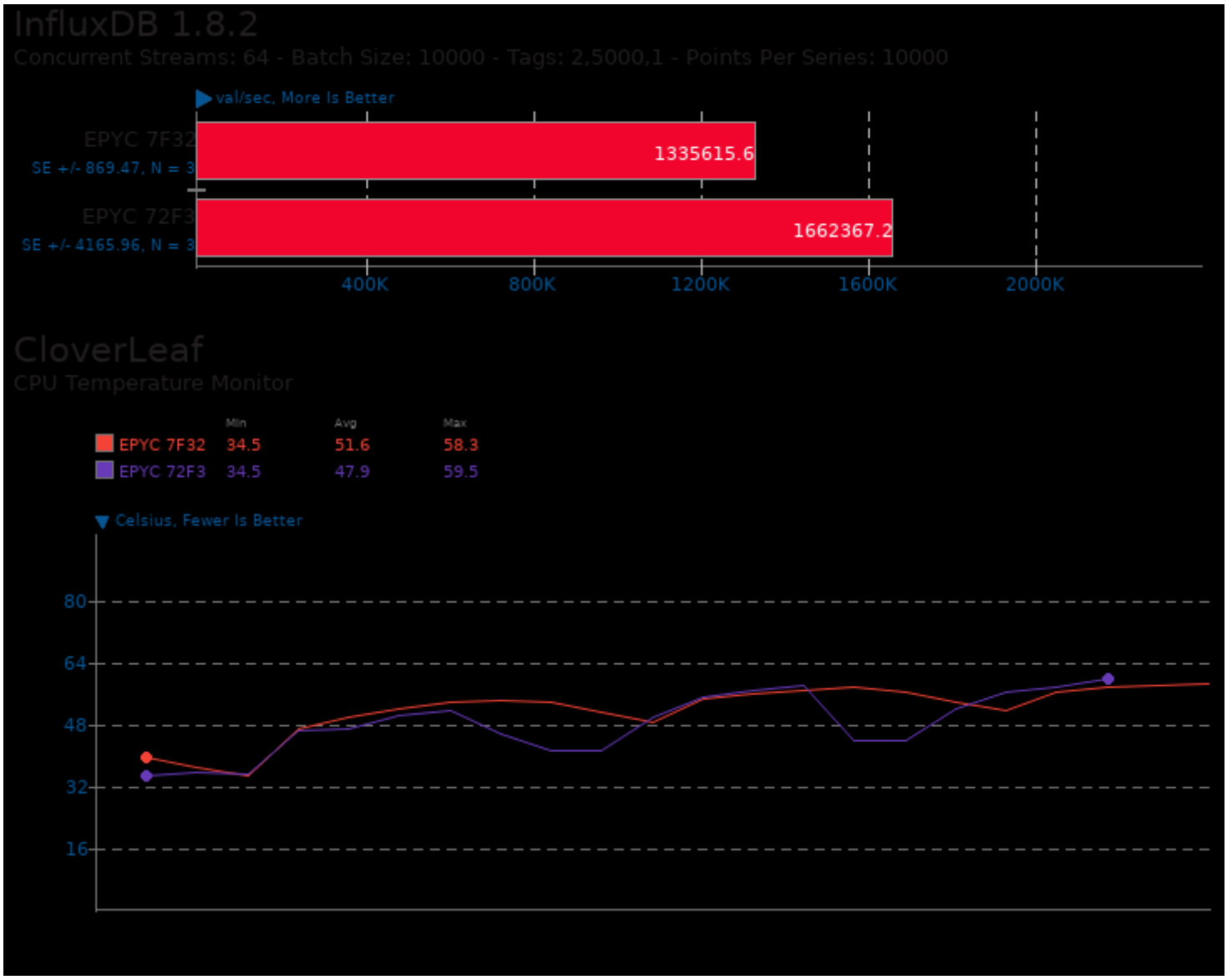
FP16: No - Mode: Inference - Network: ResNet 50 - Device: CPU



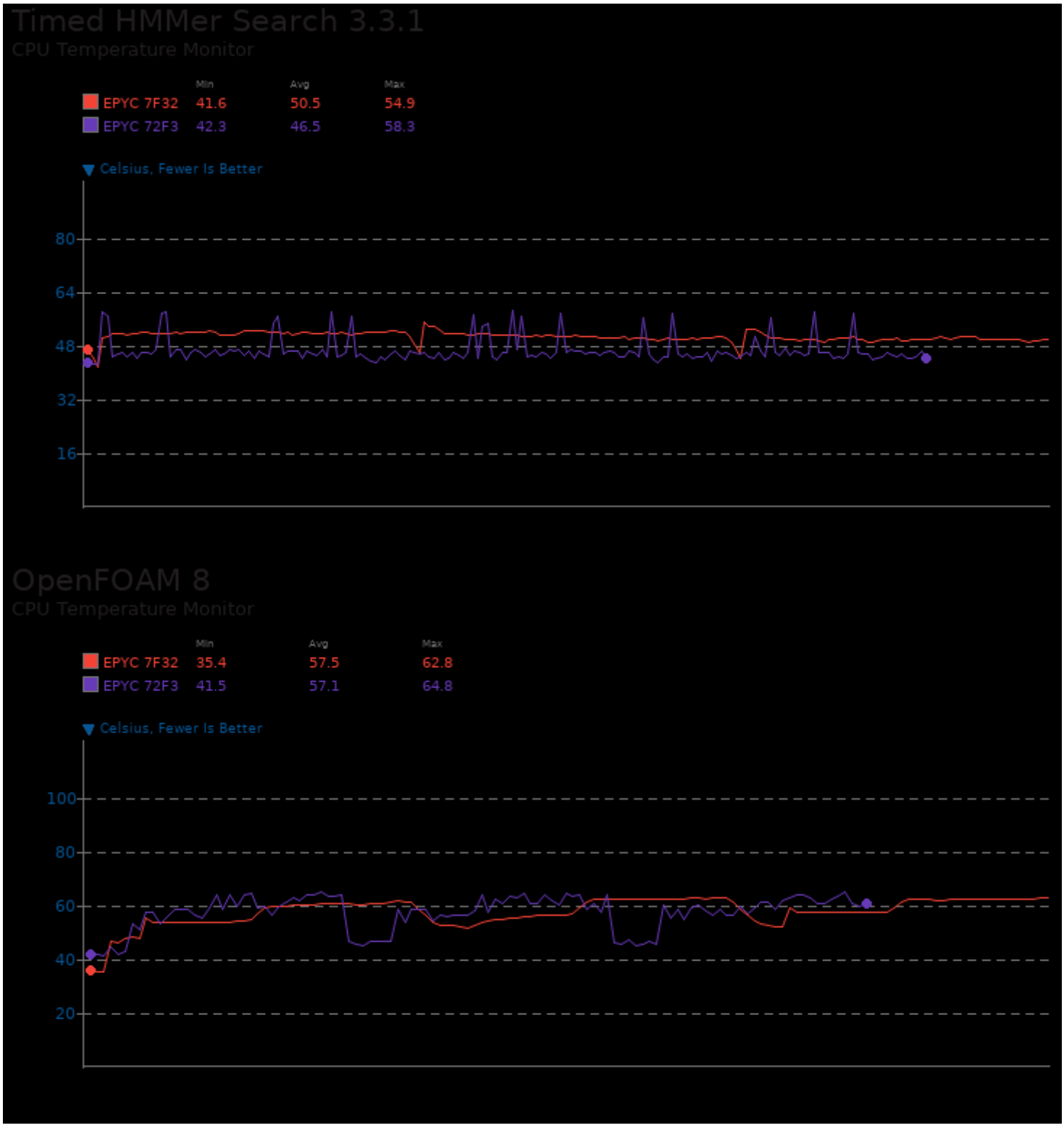
AMD EPYC 72F3 Performance Benchmarks



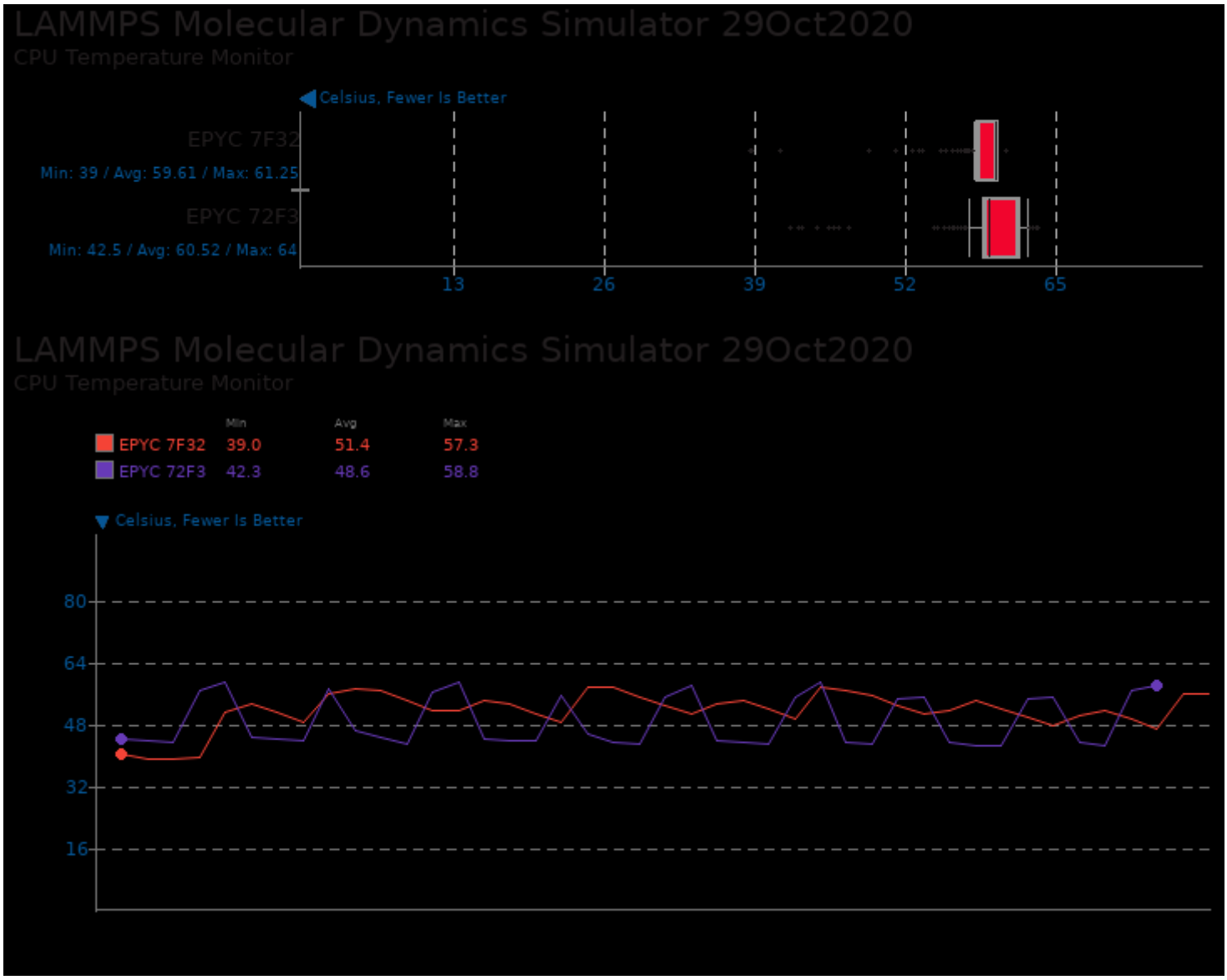
AMD EPYC 72F3 Performance Benchmarks



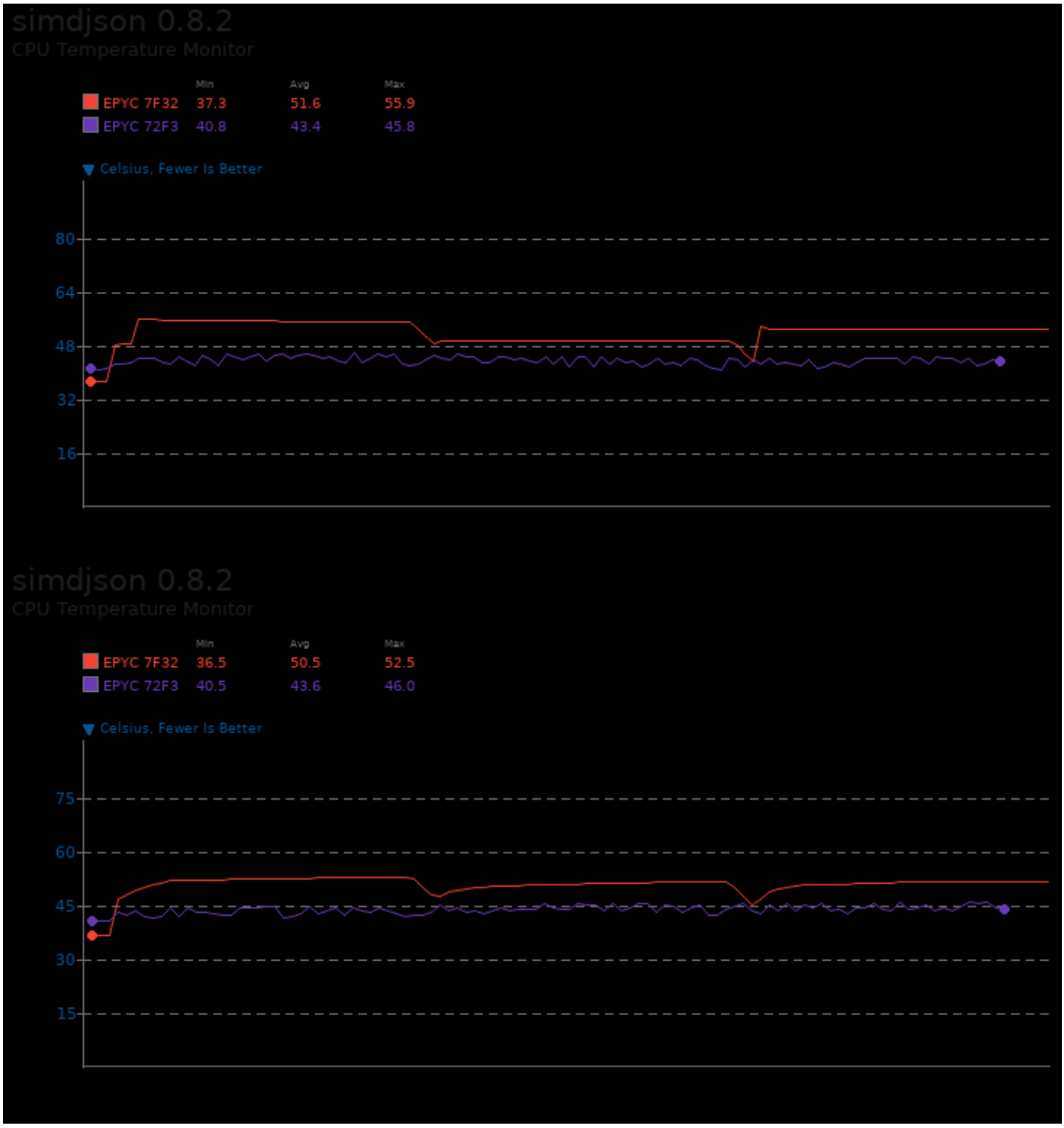

CP2K Molecular Dynamics 8.1
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.3 57.9 61.3
EPYC 72F3 41.5 56.3 64.8
Celsius, Fewer Is Better
100
80
60
40
20
NAMD 2.14
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 37.5 64.9 68.3
EPYC 72F3 42.5 58.4 64.0
Celsius, Fewer Is Better
100
80
60
40
20

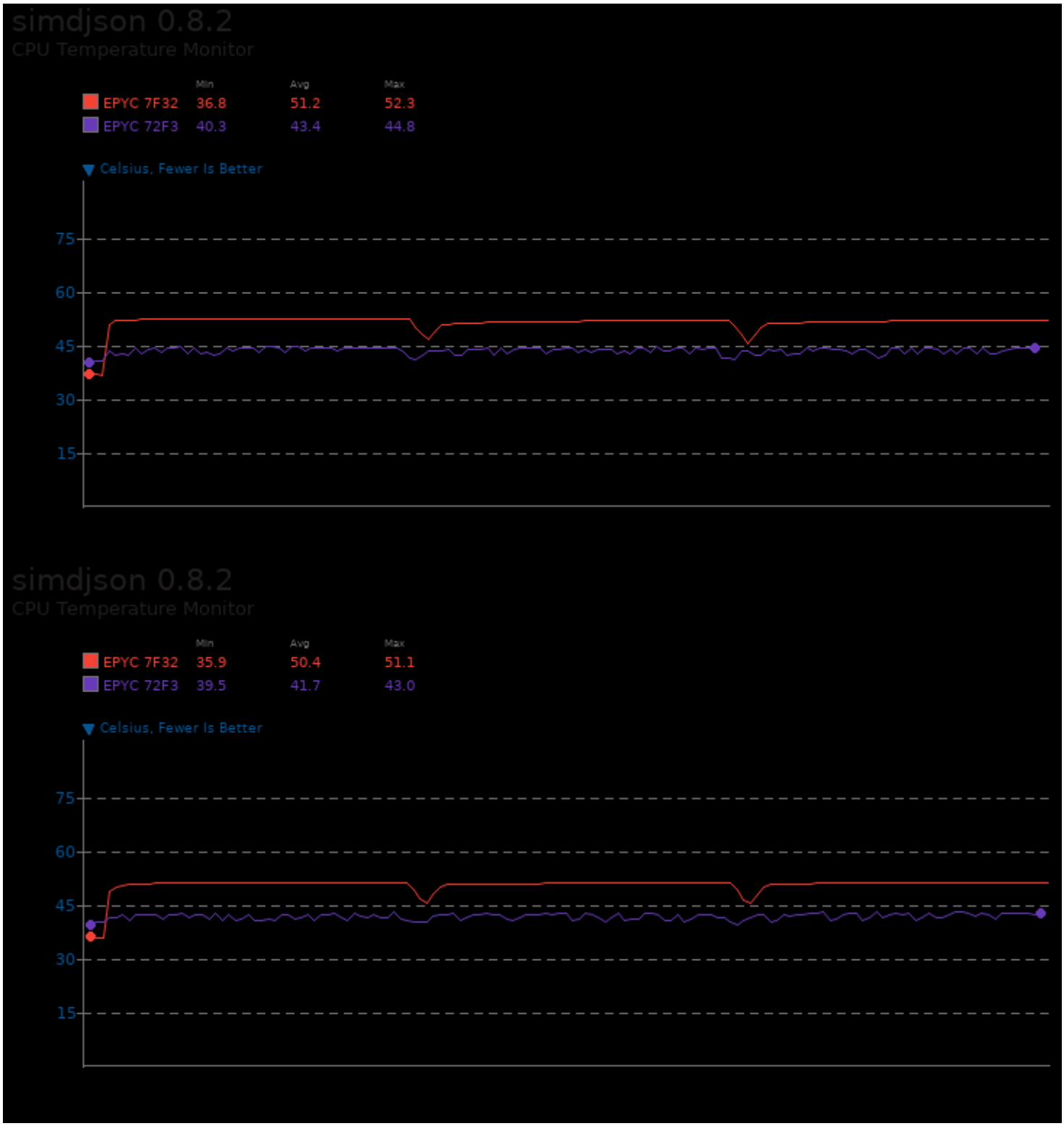

Timed HMMer Search 3.3.1
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 41.6 50.5 54.9
EPYC 72F3 42.3 46.5 58.3
Celsius, Fewer Is Better
80
64
48
32
16
OpenFOAM 8
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 35.4 57.5 62.8
EPYC 72F3 41.5 57.1 64.8
Celsius, Fewer Is Better
100
80
60
40
20

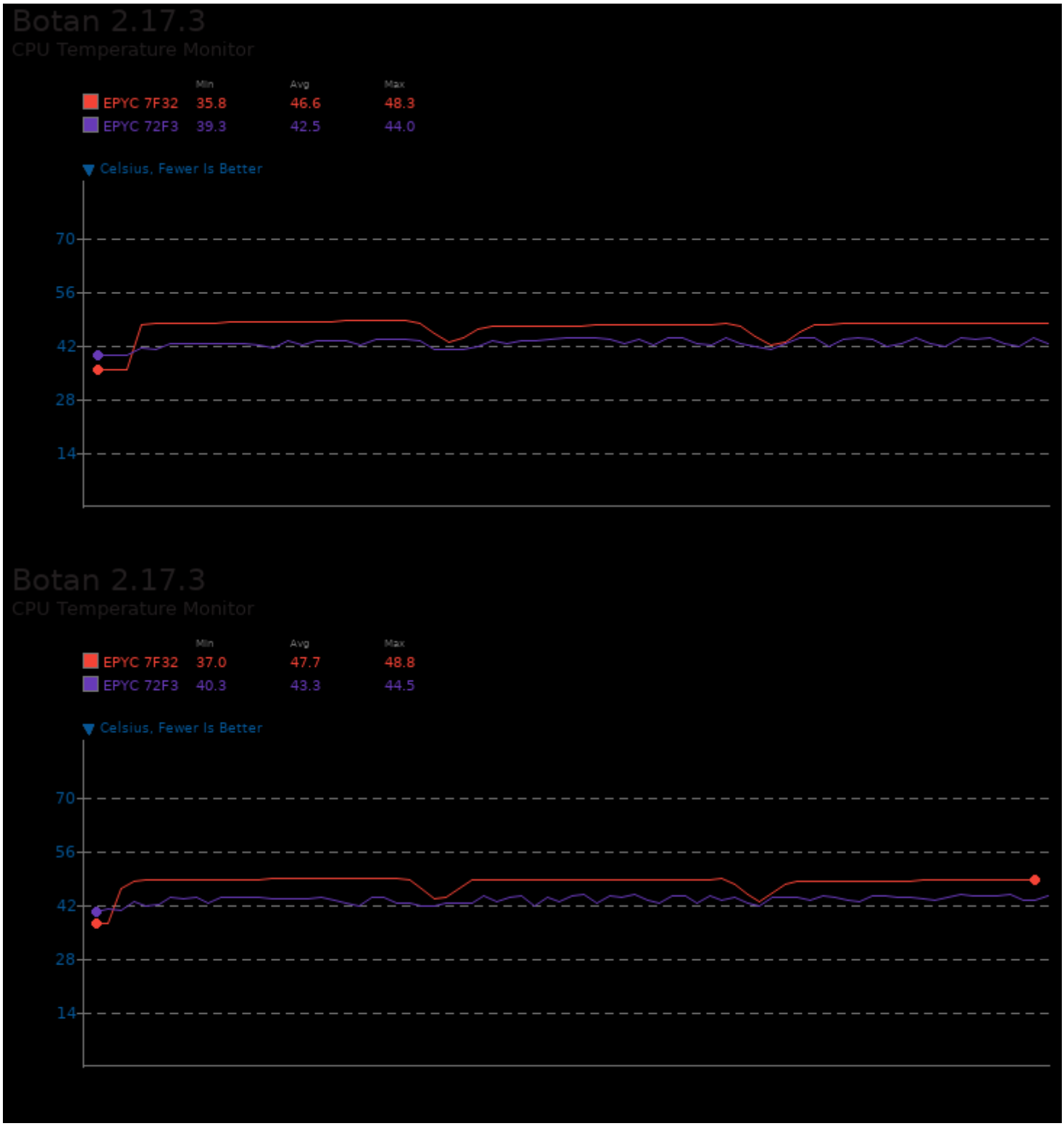
AMD EPYC 72F3 Performance Benchmarks

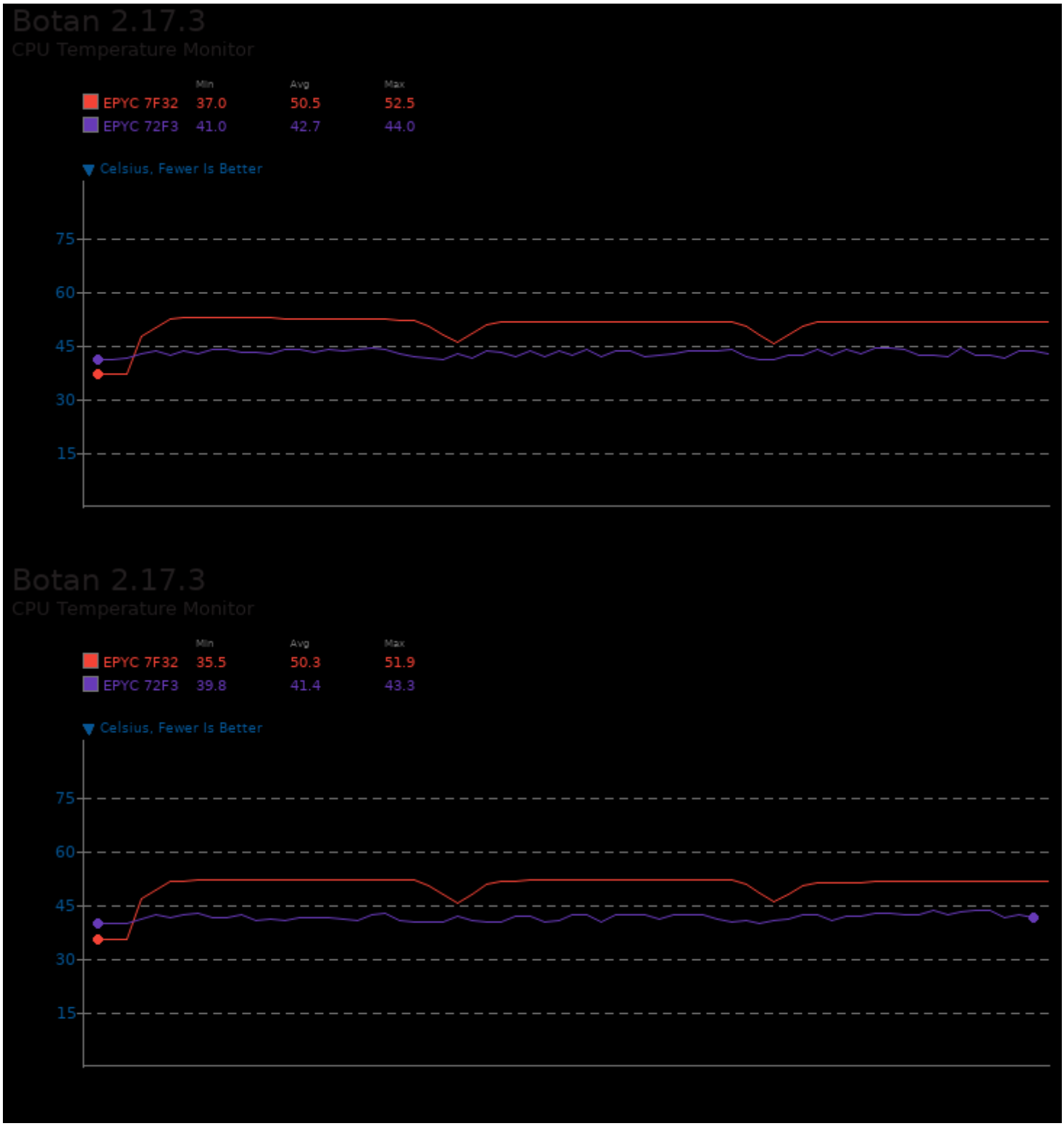


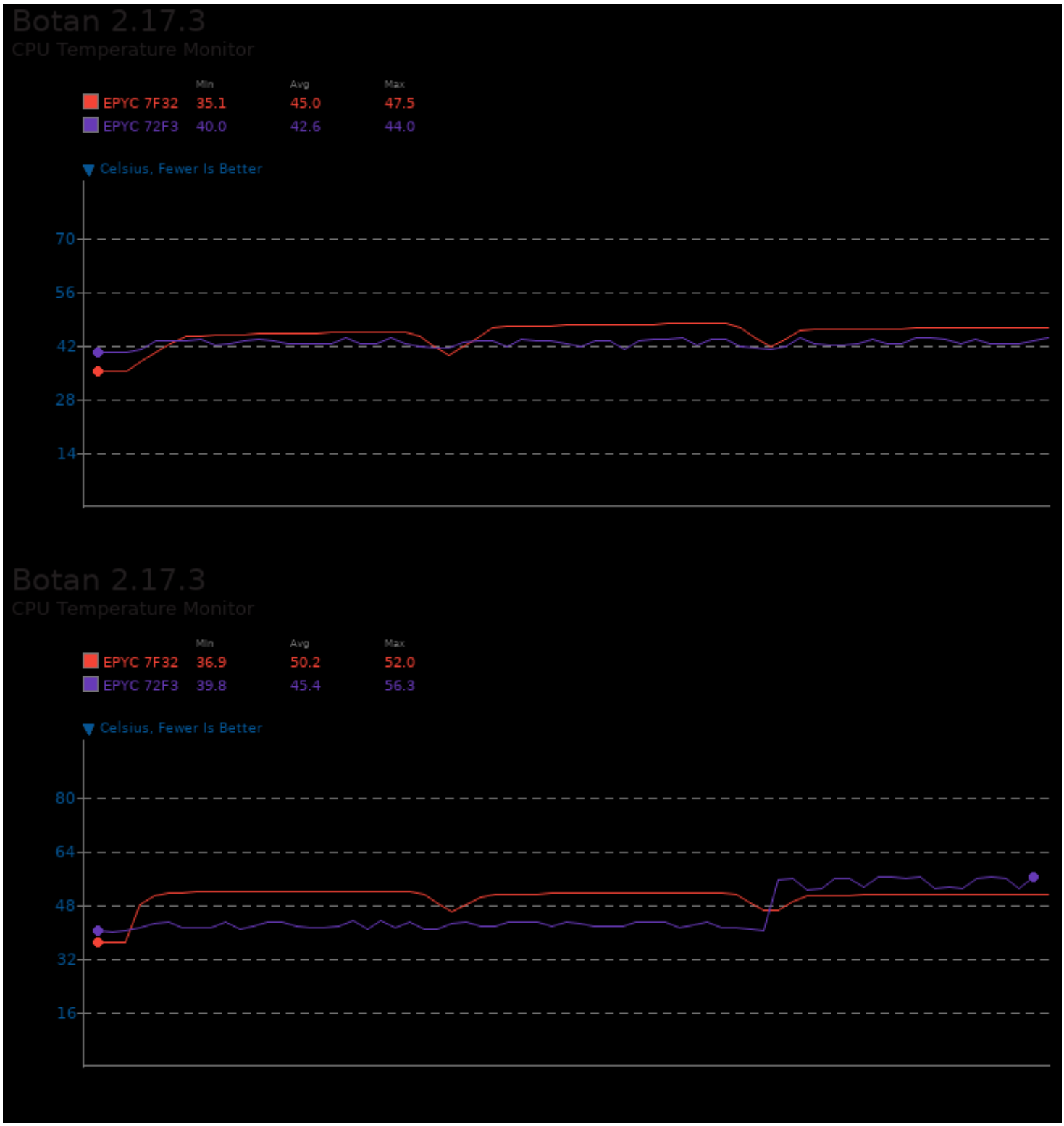
AMD EPYC 72F3 Performance Benchmarks



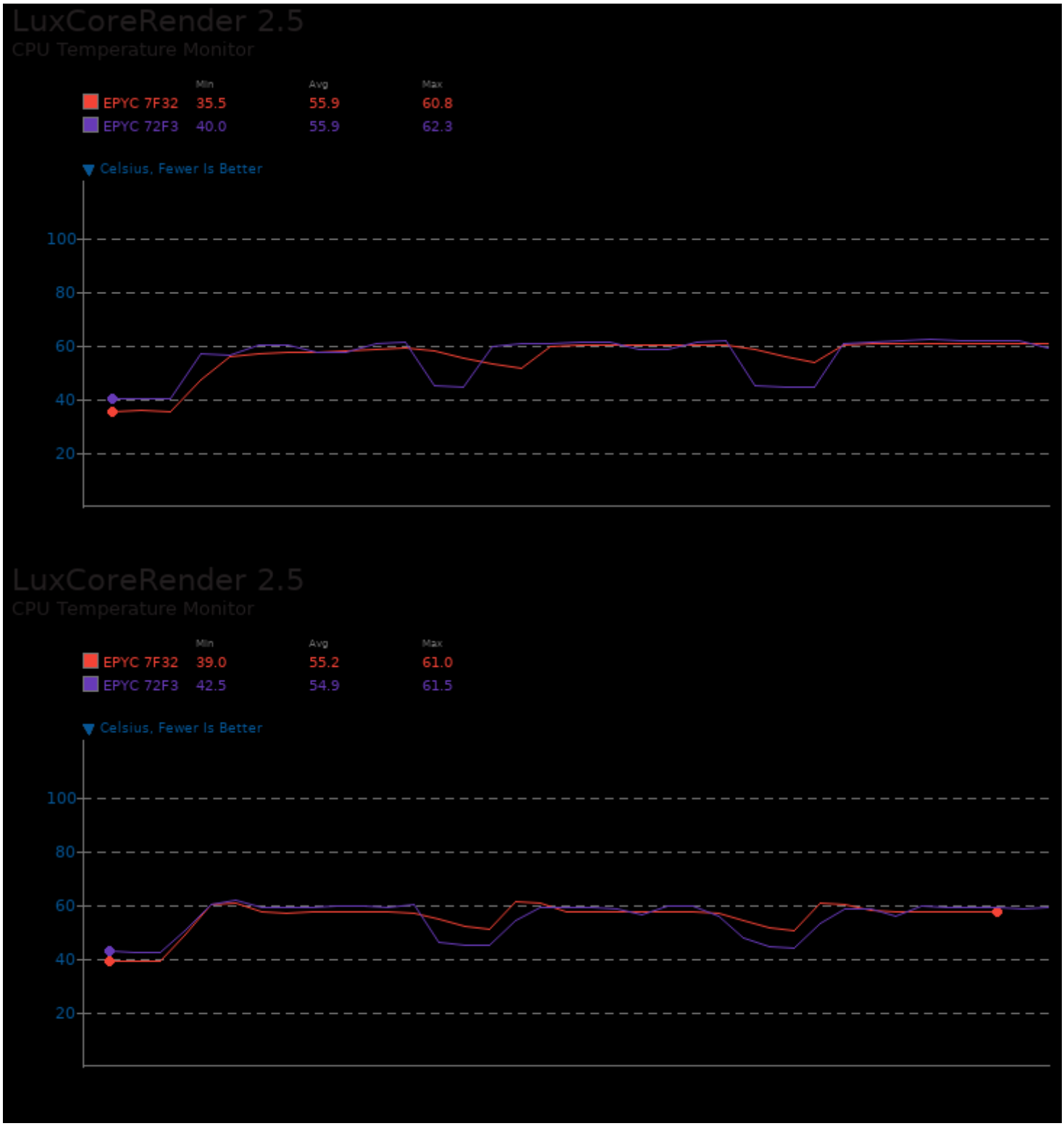

simdjson 0.8.2
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 36.8 51.2 52.3
EPYC 72F3 40.3 43.4 44.8
Celsius, Fewer Is Better
75
60
45
30
15
simdjson 0.8.2
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 35.9 50.4 51.1
EPYC 72F3 39.5 41.7 43.0
Celsius, Fewer Is Better
75
60
45
30
15

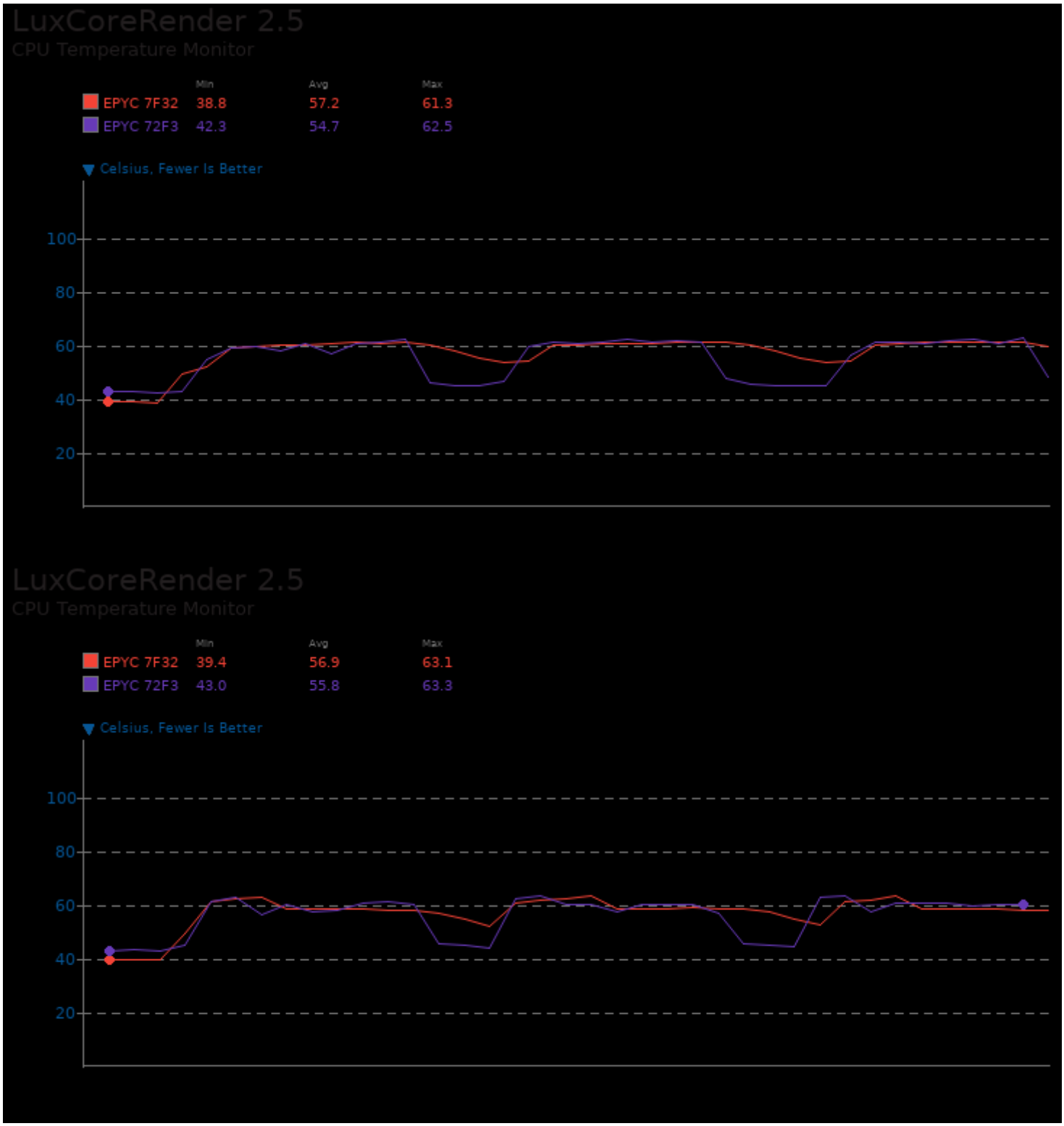

Botan 2.17.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 35.8 46.6 48.3
EPYC 72F3 39.3 42.5 44.0
Celsius, Fewer Is Better
70
56
42
28
14
Botan 2.17.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 37.0 47.7 48.8
EPYC 72F3 40.3 43.3 44.5
Celsius, Fewer Is Better
70
56
42
28
14


Botan 2.17.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 37.0 50.5 52.5
EPYC 72F3 41.0 42.7 44.0
Celsius, Fewer Is Better
75
60
45
30
15
Botan 2.17.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 35.5 50.3 51.9
EPYC 72F3 39.8 41.4 43.3
Celsius, Fewer Is Better
75
60
45
30
15


Botan 2.17.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 35.1 45.0 47.5
EPYC 72F3 40.0 42.6 44.0
Celsius, Fewer Is Better
70
56
42
28
14

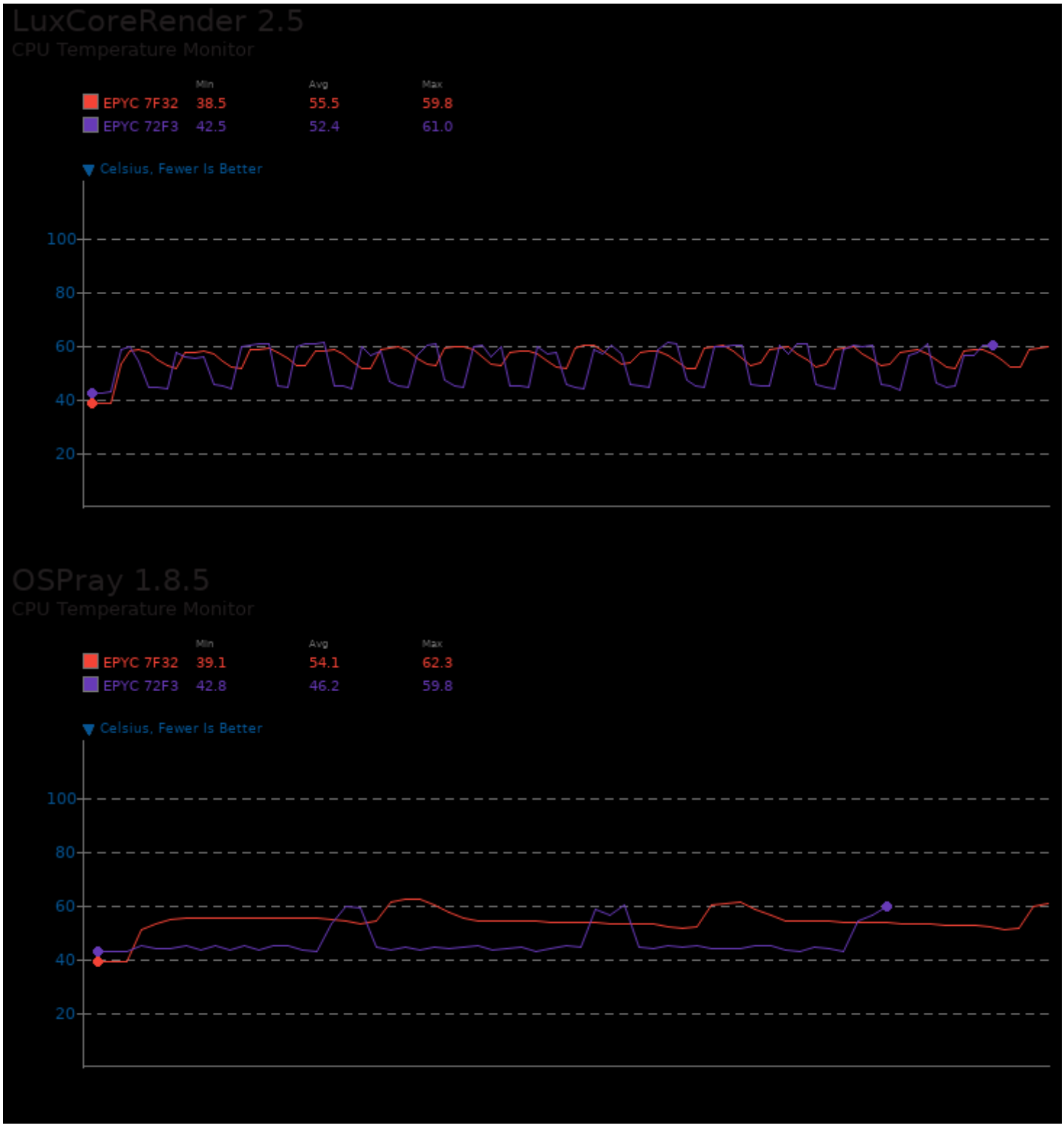
Botan 2.17.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 36.9 50.2 52.0
EPYC 72F3 39.8 45.4 56.3
Celsius, Fewer Is Better
80
64
48
32
16


LuxCoreRender 2.5
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 35.5 55.9 60.8
EPYC 72F3 40.0 55.9 62.3
Celsius, Fewer Is Better
100
80
60
40
20
LuxCoreRender 2.5
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 39.0 55.2 61.0
EPYC 72F3 42.5 54.9 61.5
Celsius, Fewer Is Better
100
80
60
40
20

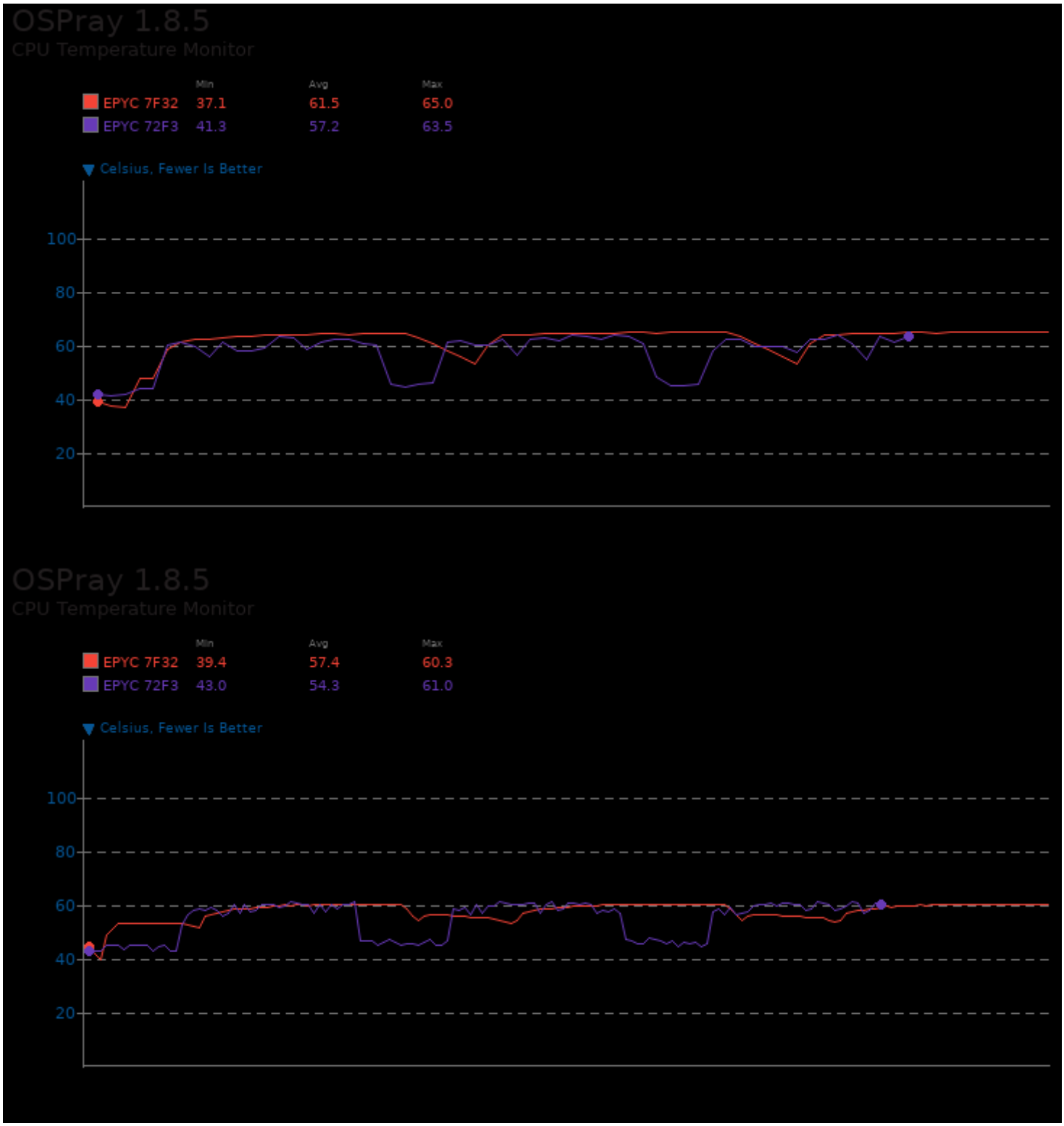

LuxCoreRender 2.5
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.8 57.2 61.3
EPYC 72F3 42.3 54.7 62.5
Celsius, Fewer Is Better
100
80
60
40
20

LuxCoreRender 2.5
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 39.4 56.9 63.1
EPYC 72F3 43.0 55.8 63.3
Celsius, Fewer Is Better
100
80
60
40
20

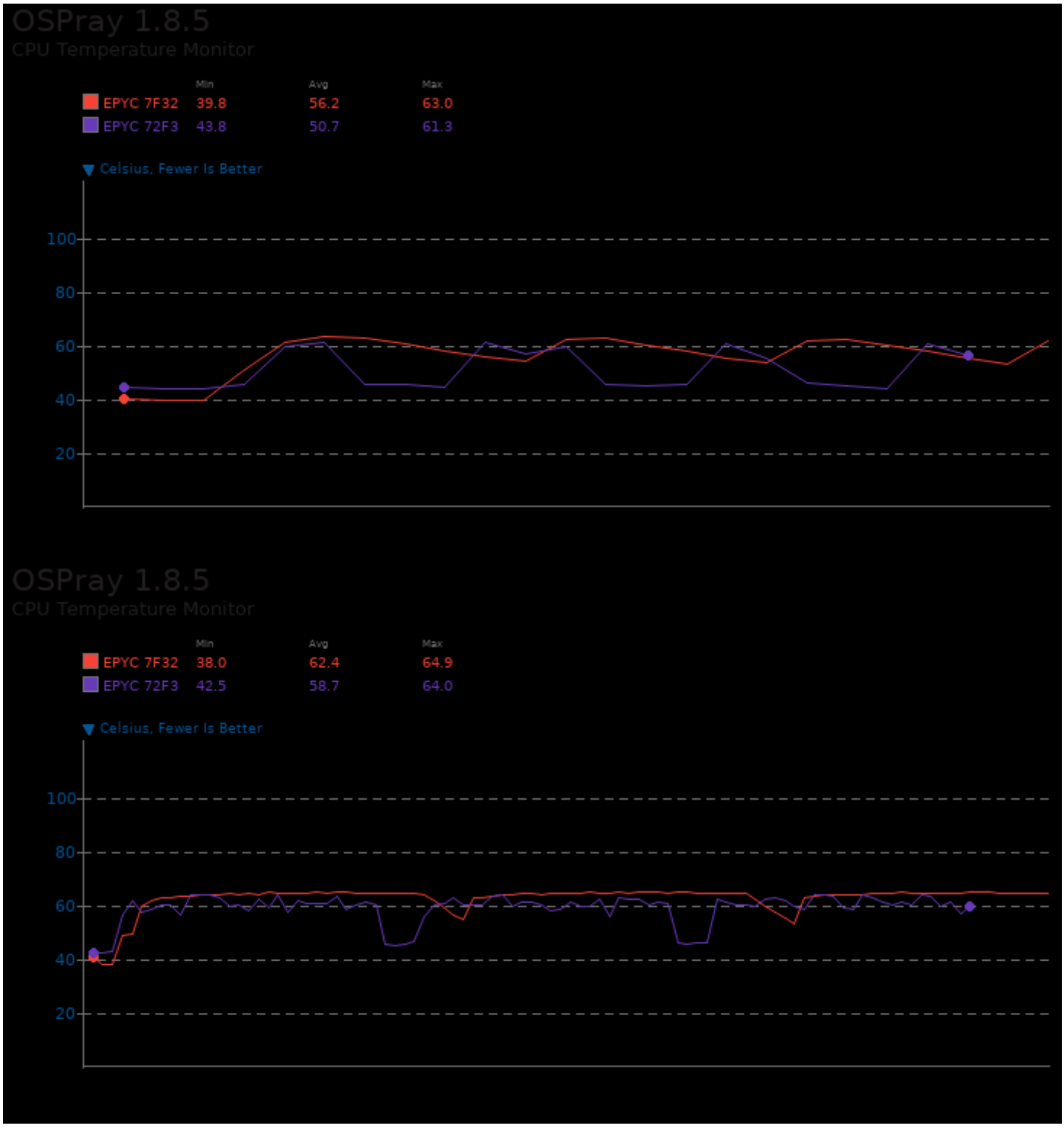
AMD EPYC 72F3 Performance Benchmarks

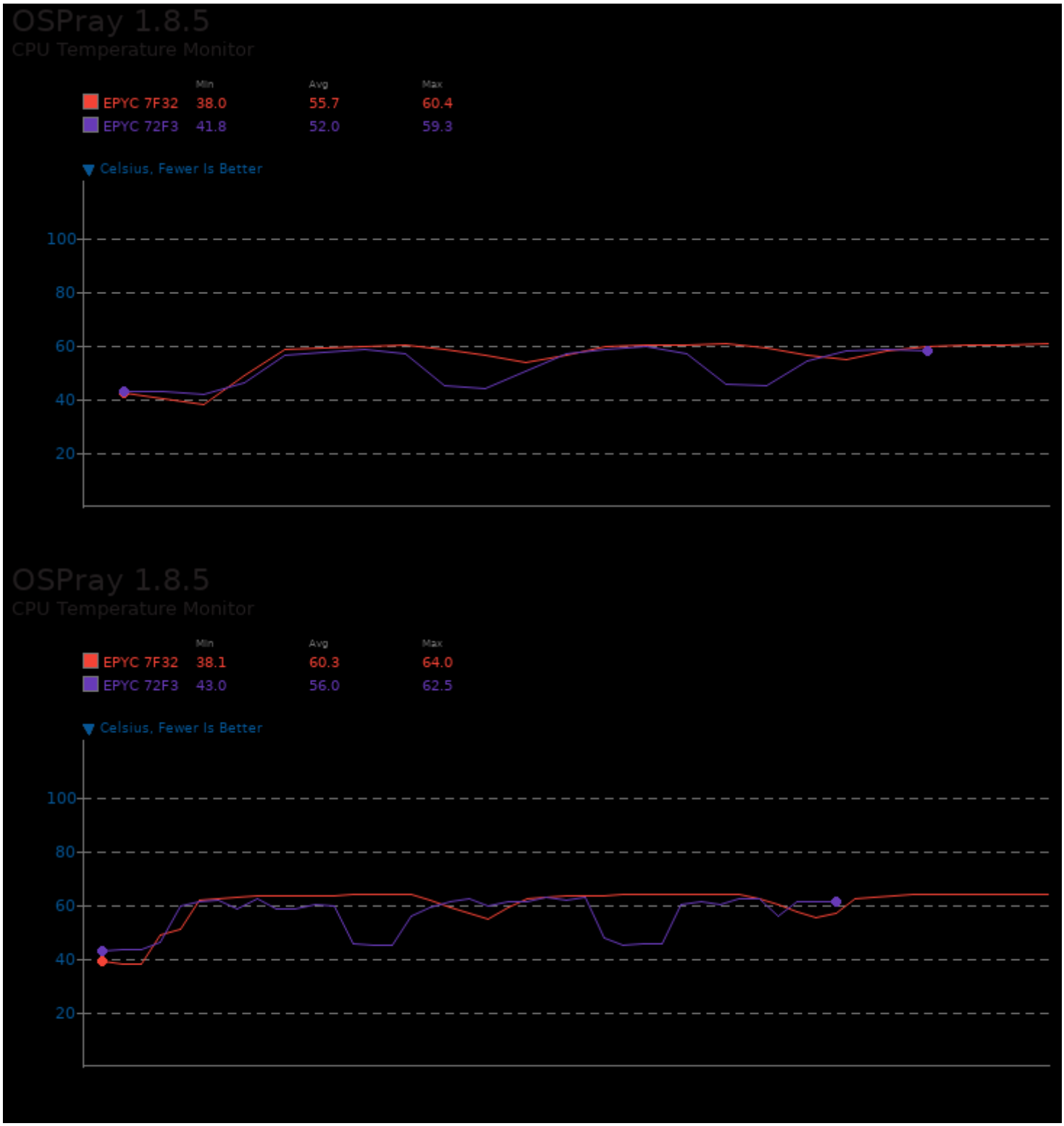


AMD EPYC 72F3 Performance Benchmarks

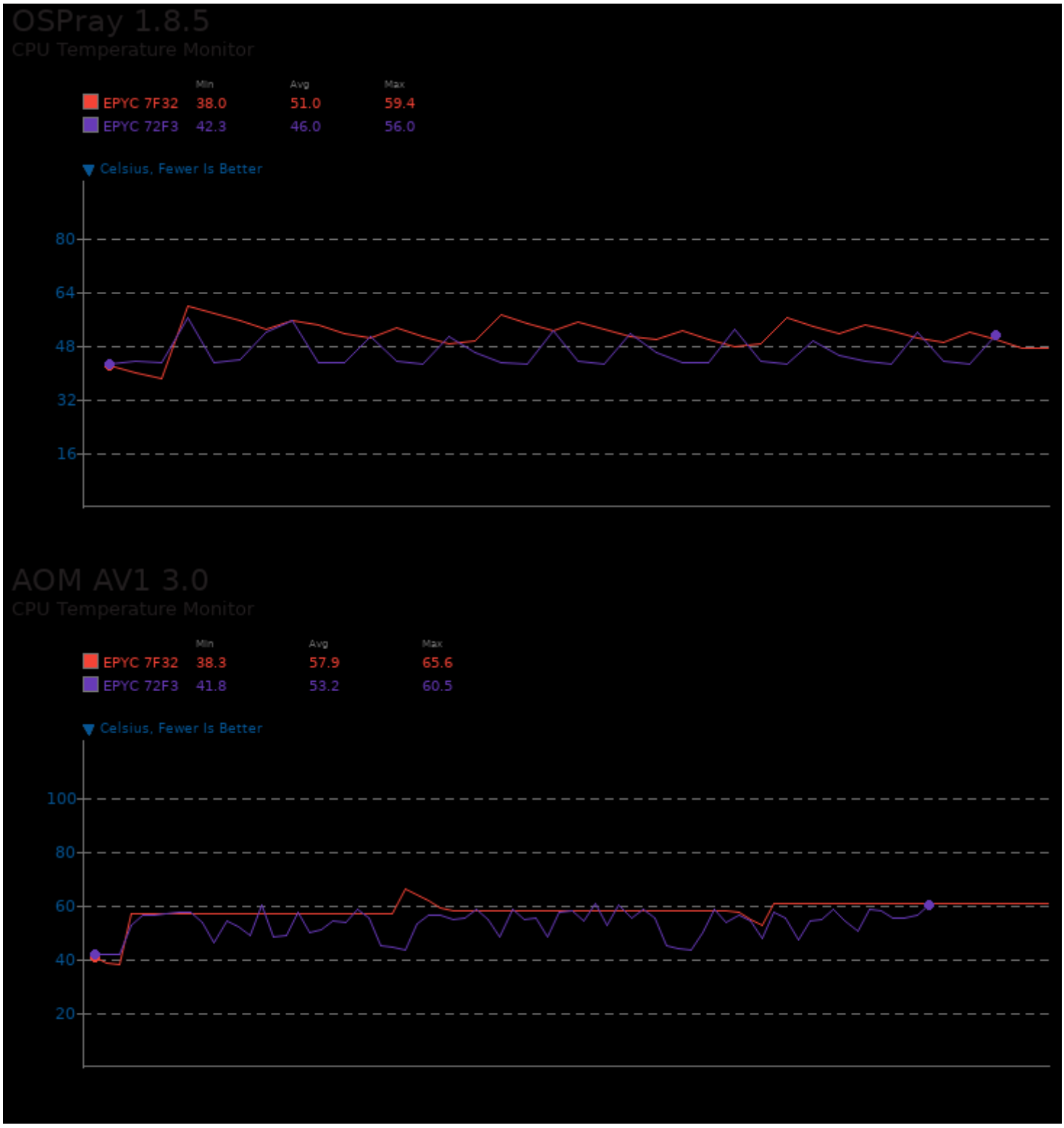


AMD EPYC 72F3 Performance Benchmarks

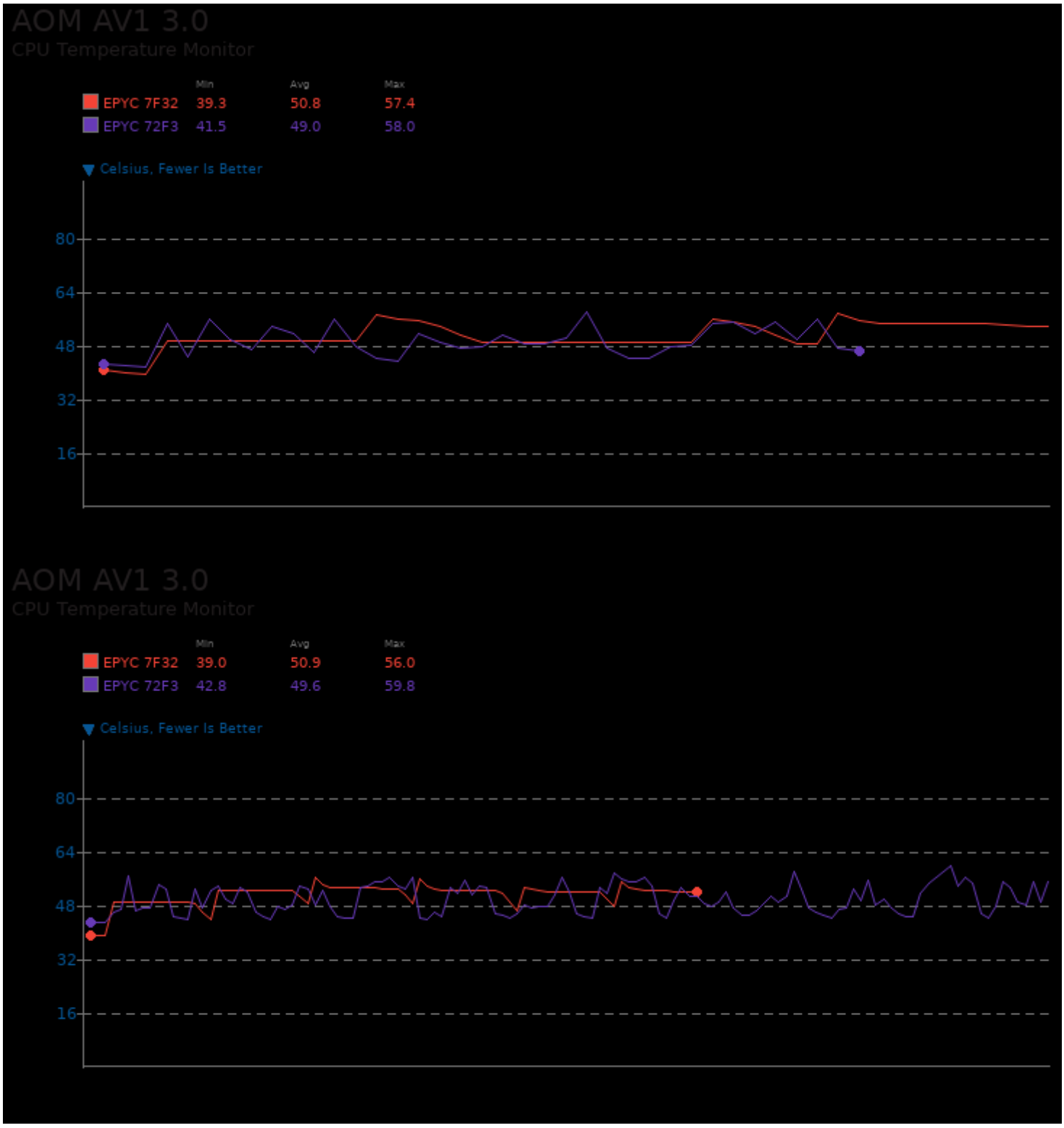



OSPray 1.8.5
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.0 55.7 60.4
EPYC 72F3 41.8 52.0 59.3
Celsius, Fewer Is Better
100
80
60
40
20
OSPray 1.8.5
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.1 60.3 64.0
EPYC 72F3 43.0 56.0 62.5
Celsius, Fewer Is Better
100
80
60
40
20

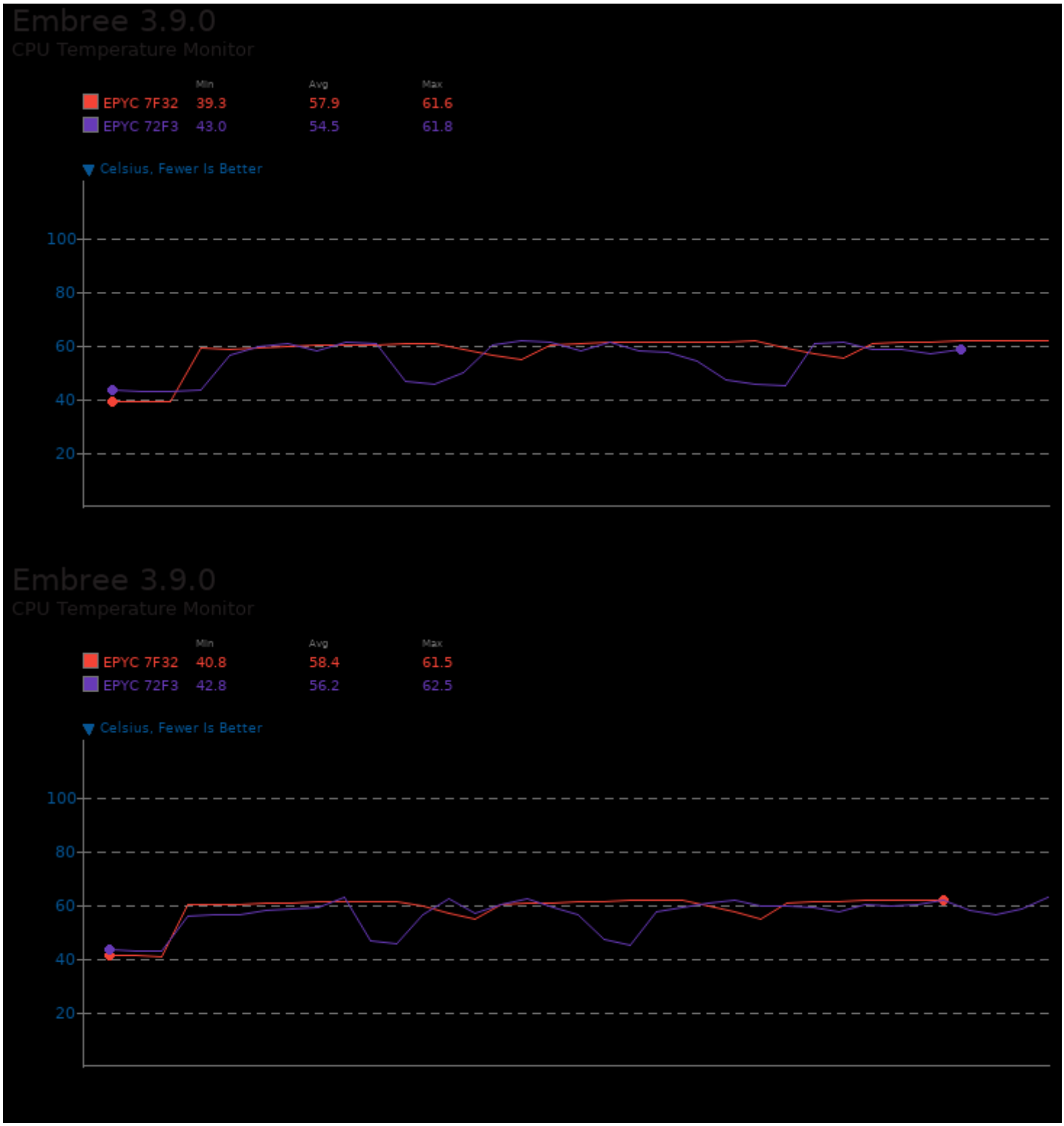
AMD EPYC 72F3 Performance Benchmarks



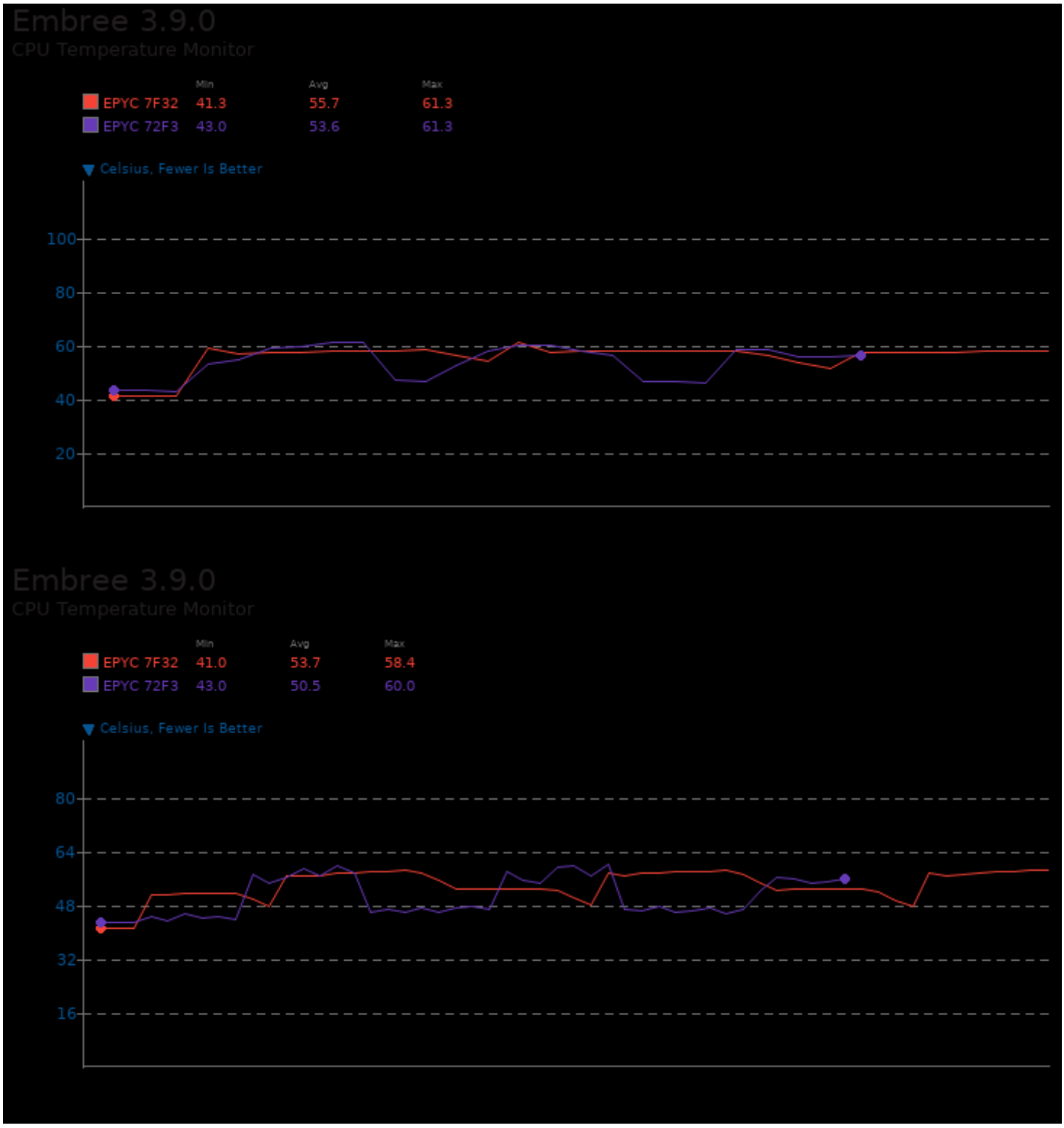
AMD EPYC 72F3 Performance Benchmarks



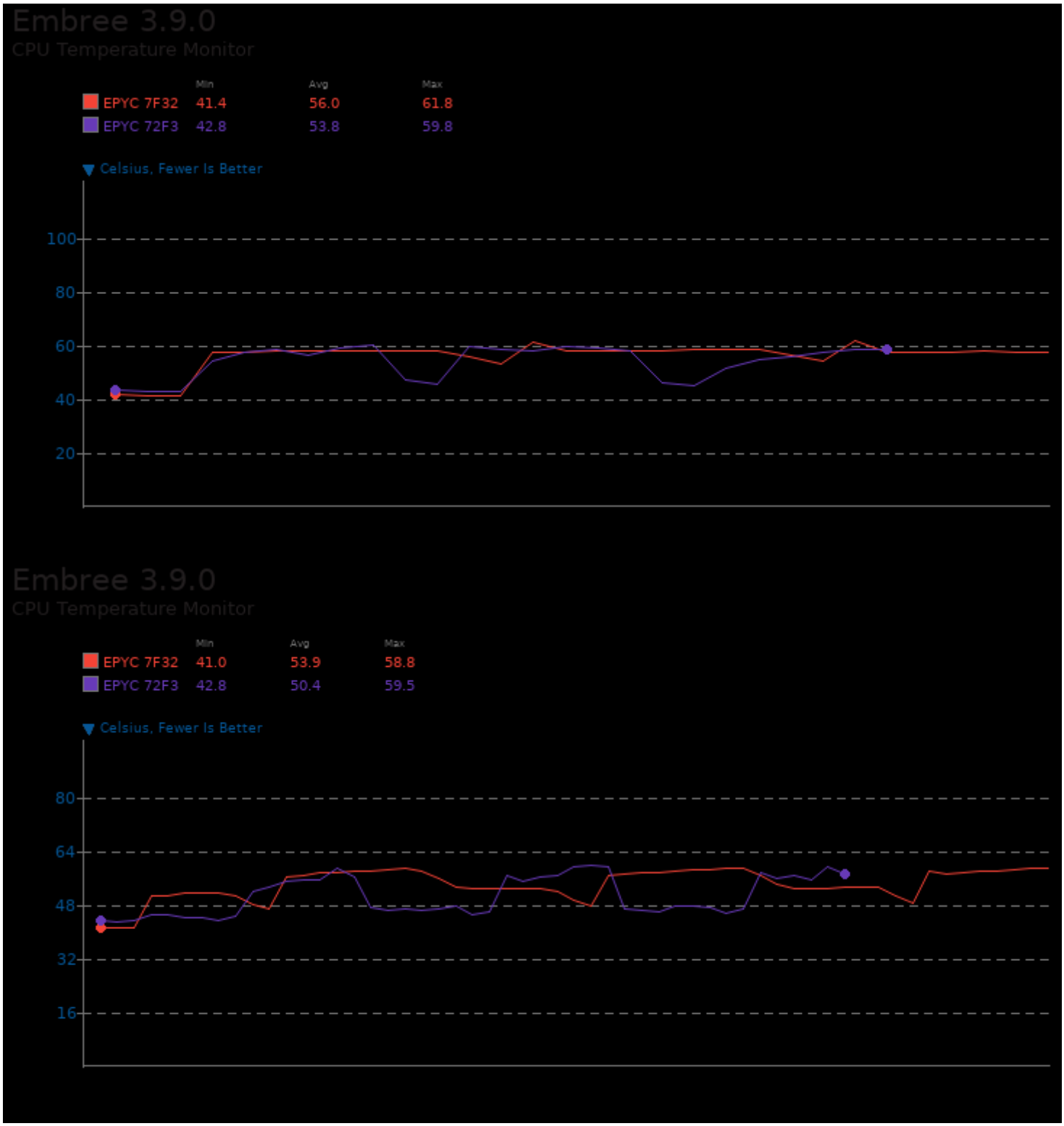
AMD EPYC 72F3 Performance Benchmarks



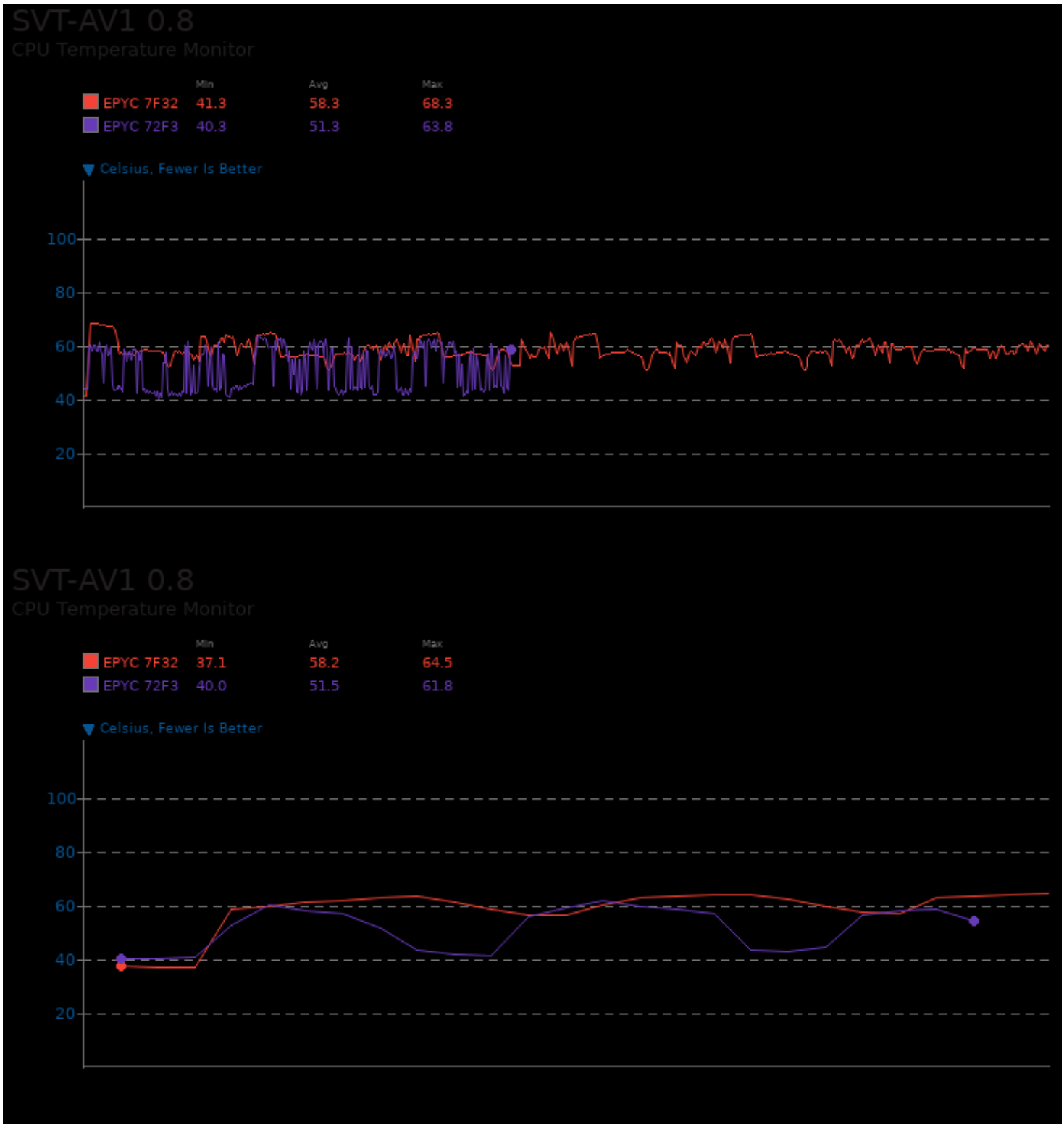
AMD EPYC 72F3 Performance Benchmarks



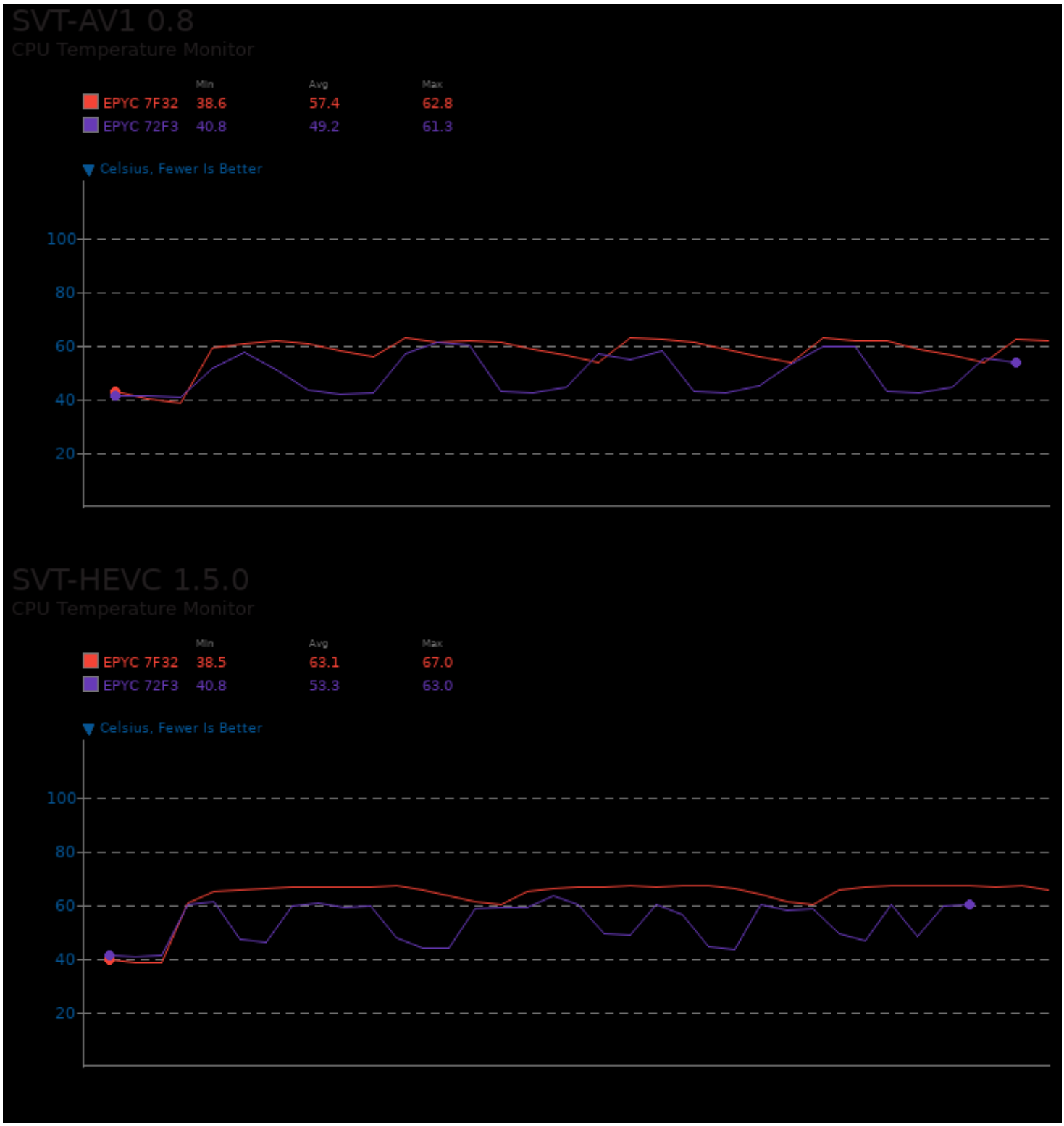
AMD EPYC 72F3 Performance Benchmarks



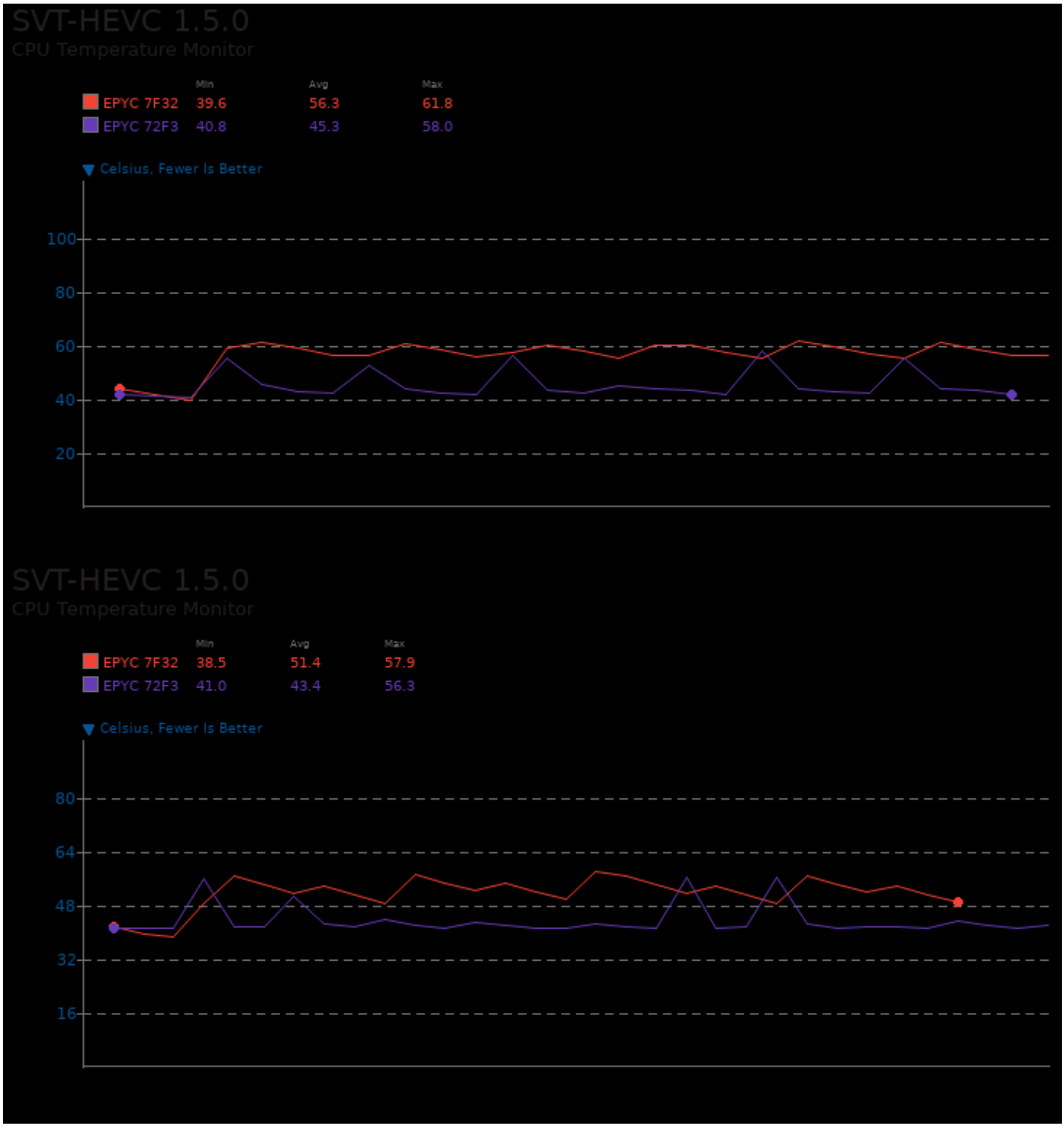
AMD EPYC 72F3 Performance Benchmarks



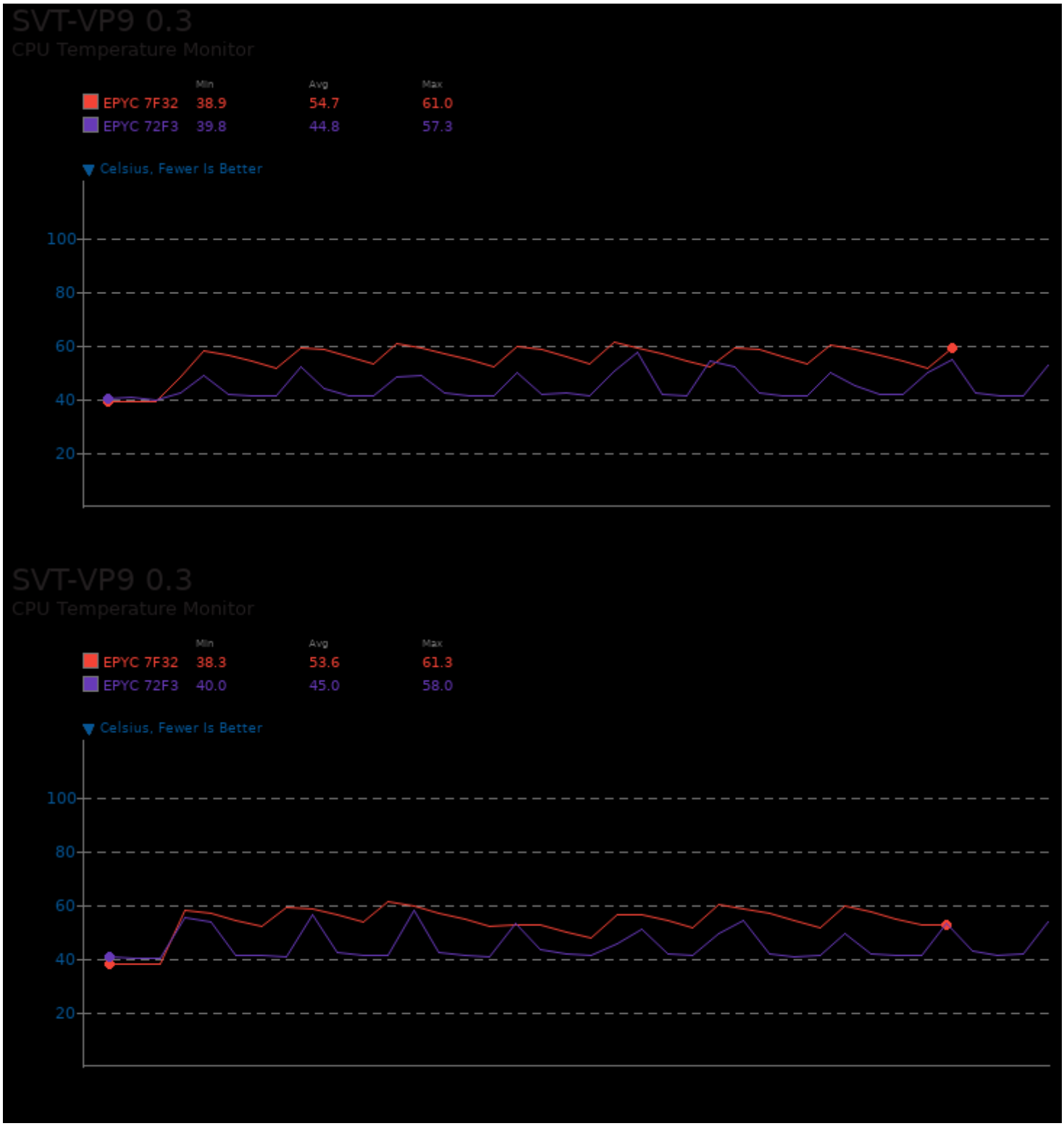
AMD EPYC 72F3 Performance Benchmarks



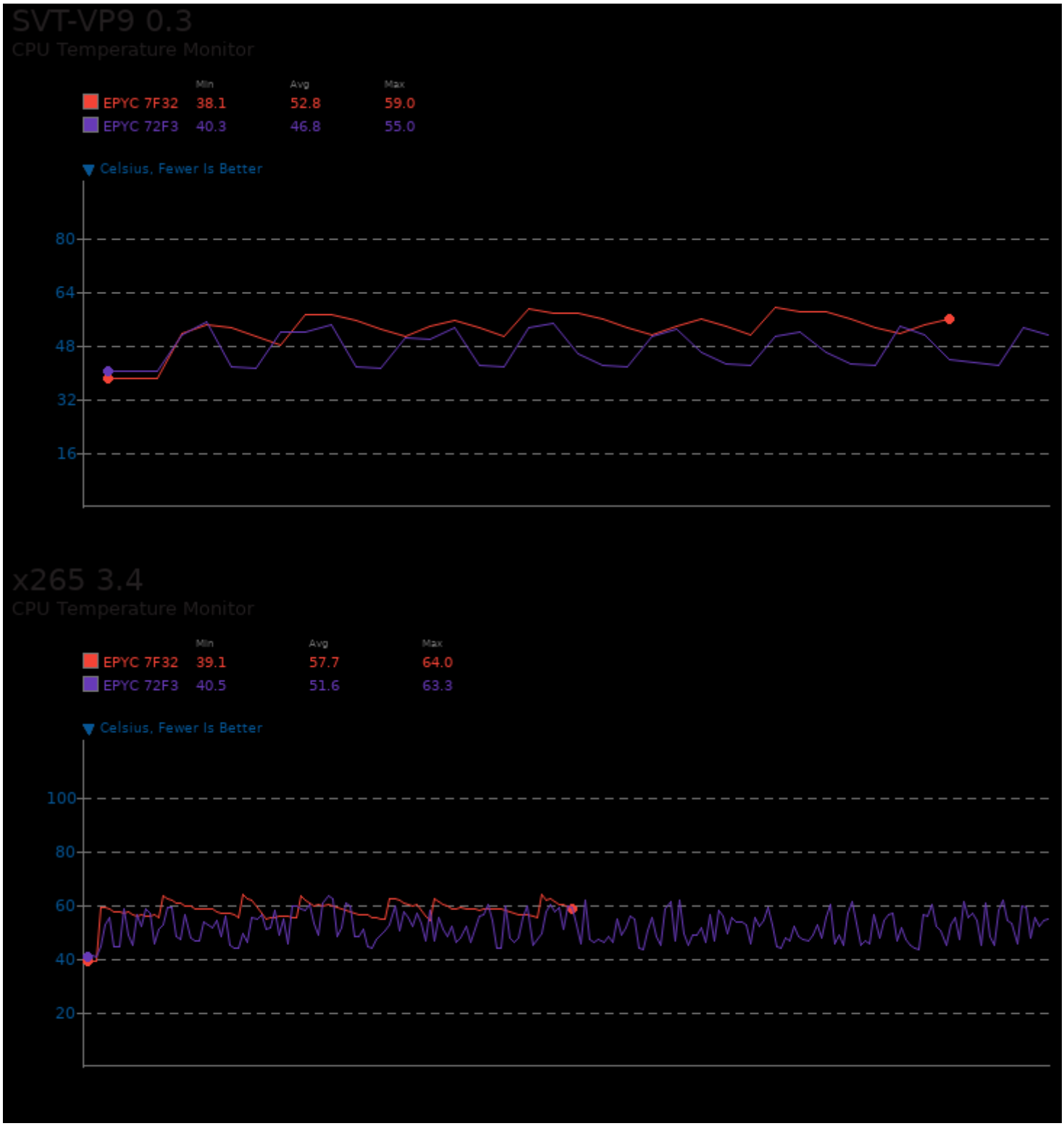
AMD EPYC 72F3 Performance Benchmarks



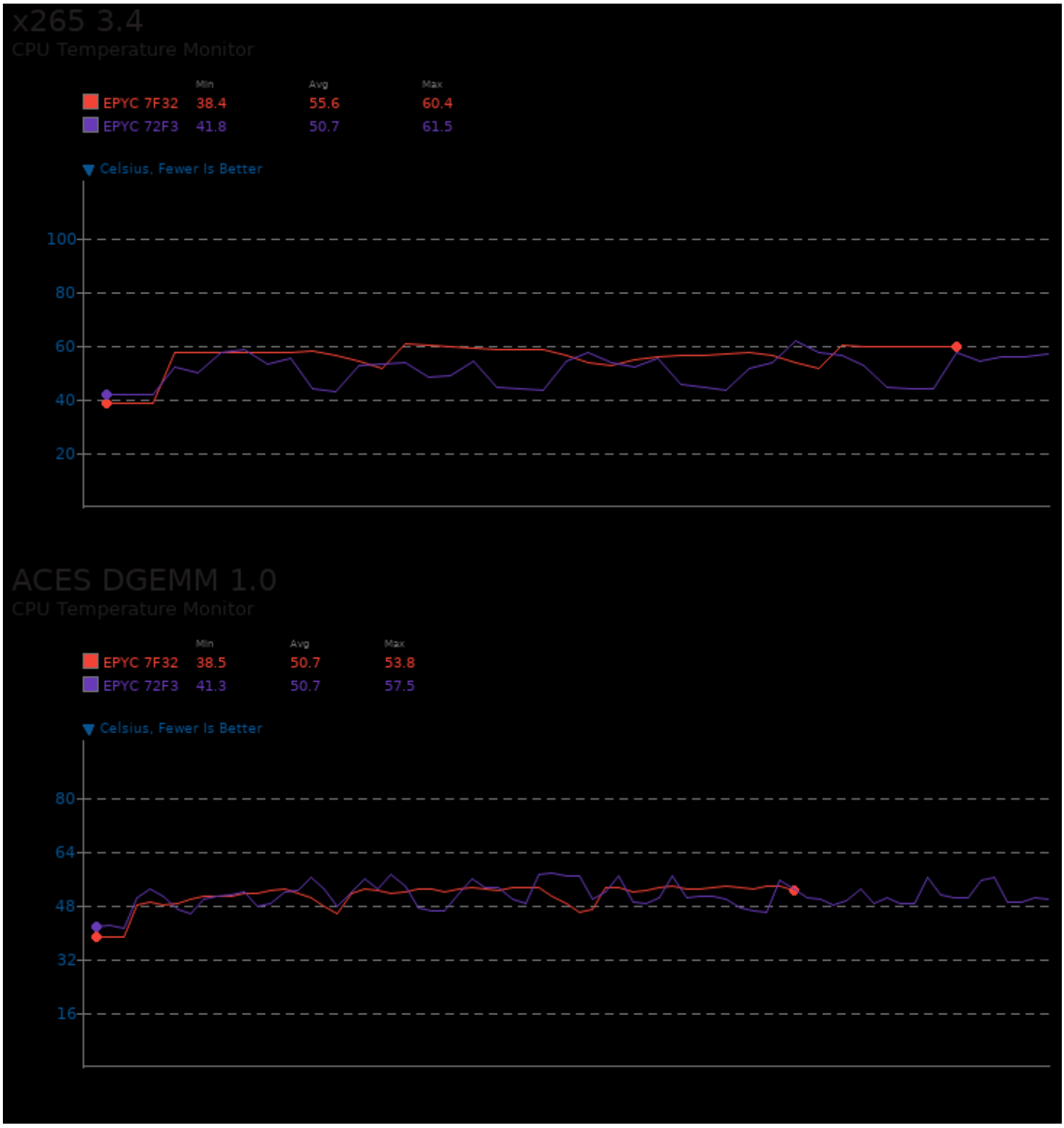
AMD EPYC 72F3 Performance Benchmarks



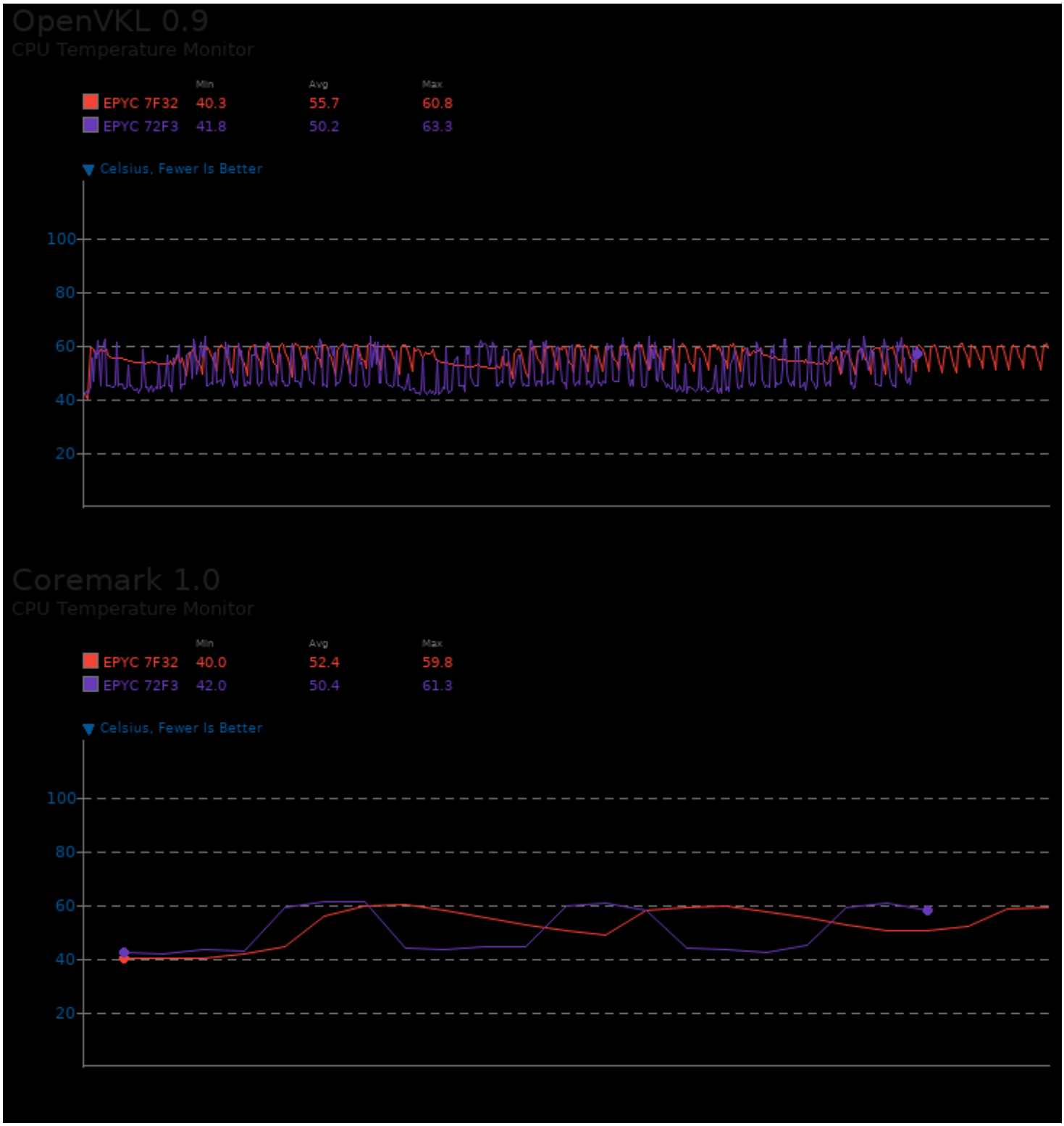
AMD EPYC 72F3 Performance Benchmarks



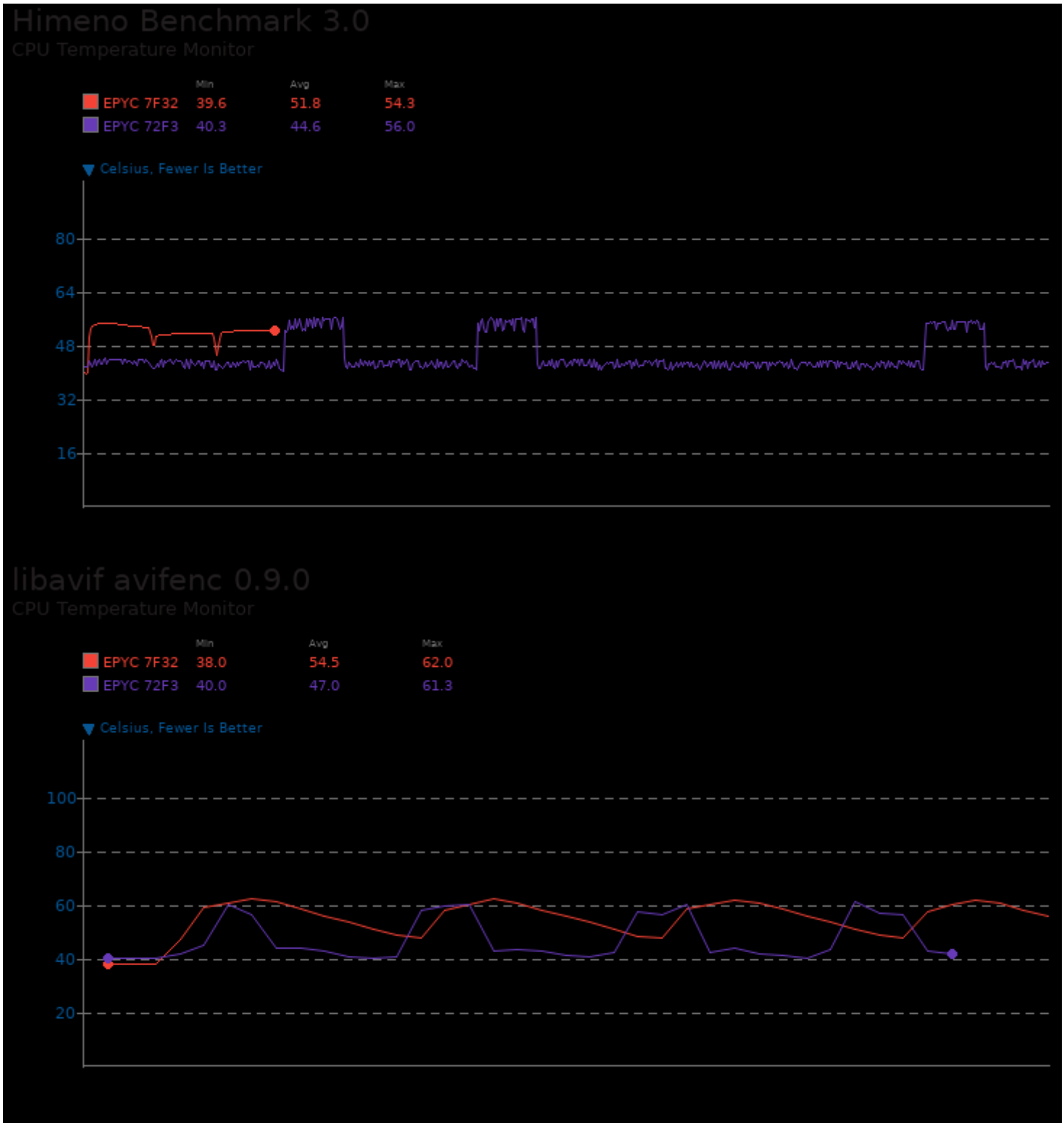
AMD EPYC 72F3 Performance Benchmarks

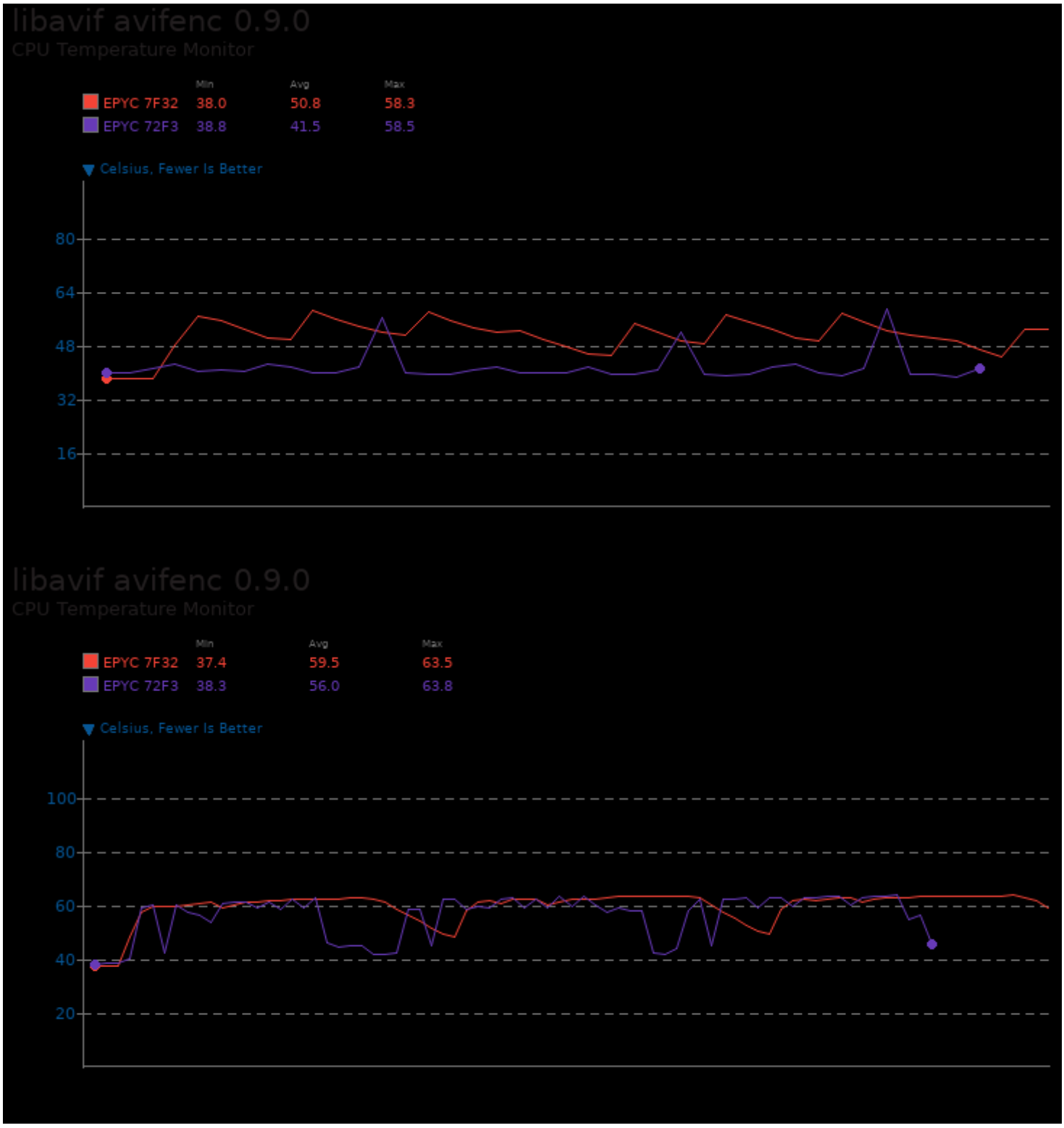


AMD EPYC 72F3 Performance Benchmarks



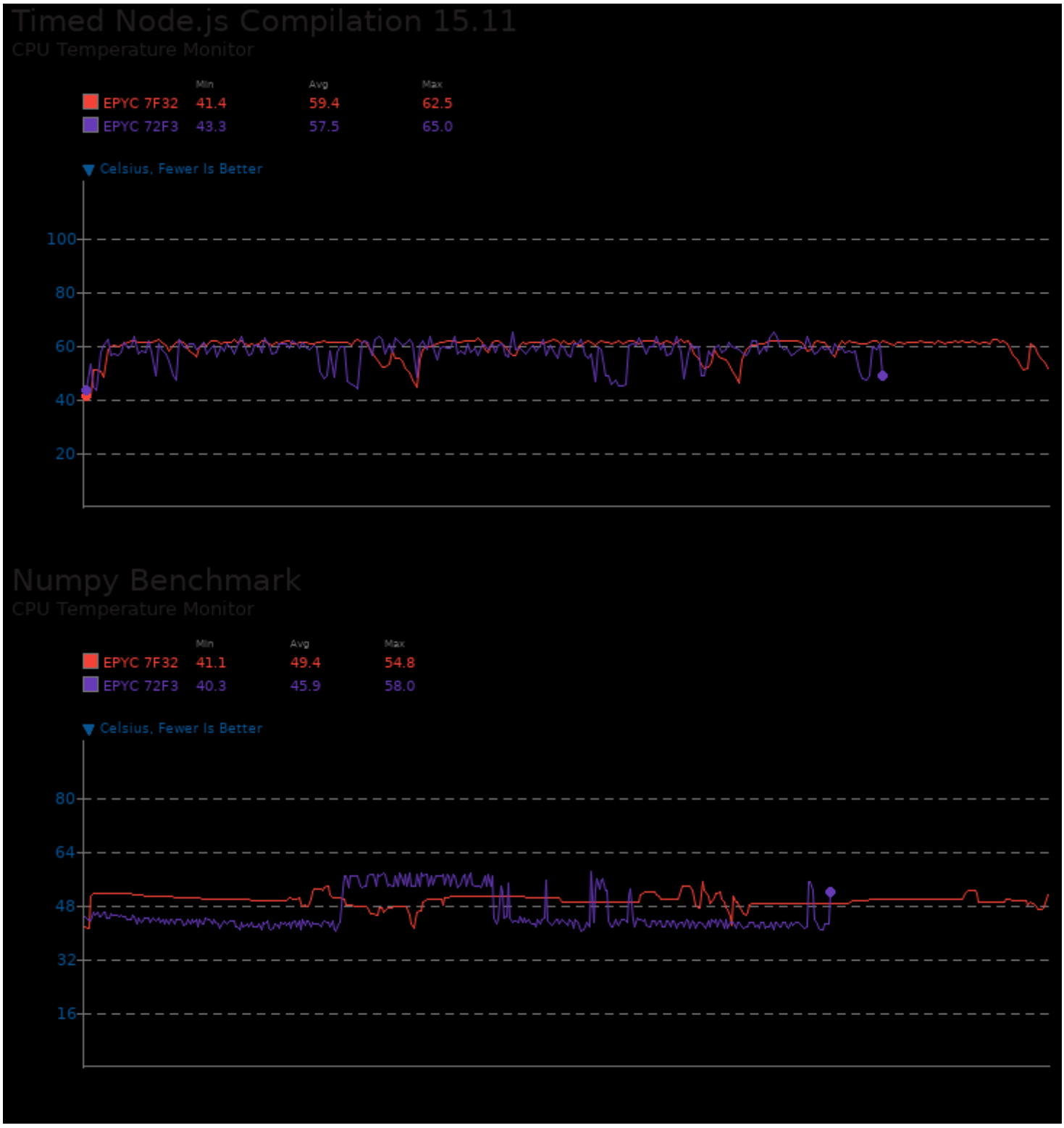
AMD EPYC 72F3 Performance Benchmarks

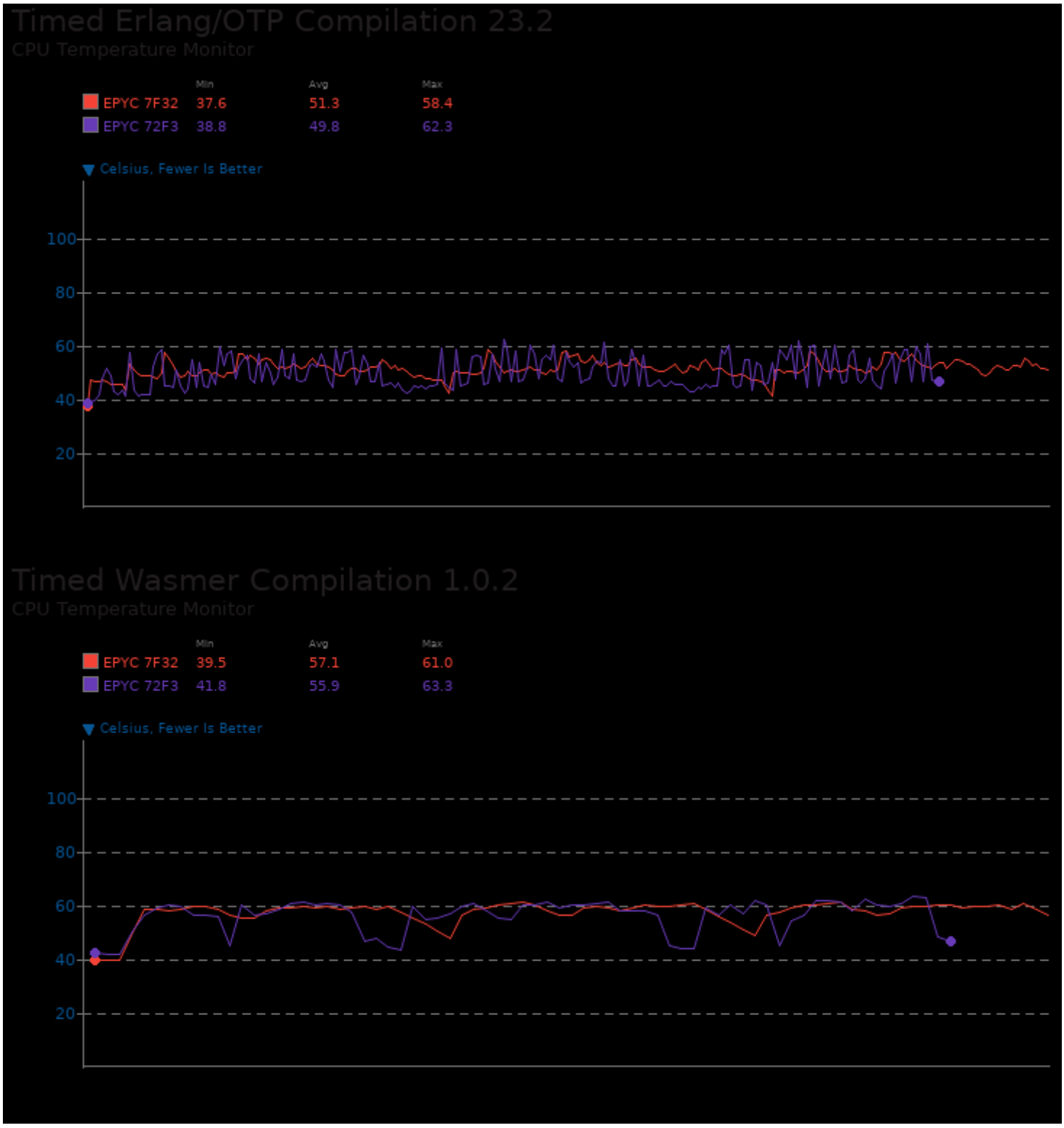



libavif avifenc 0.9.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.0 50.8 58.3
EPYC 72F3 38.8 41.5 58.5
Celsius, Fewer Is Better
80
64
48
32
16
libavif avifenc 0.9.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 37.4 59.5 63.5
EPYC 72F3 38.3 56.0 63.8
Celsius, Fewer Is Better
100
80
60
40
20

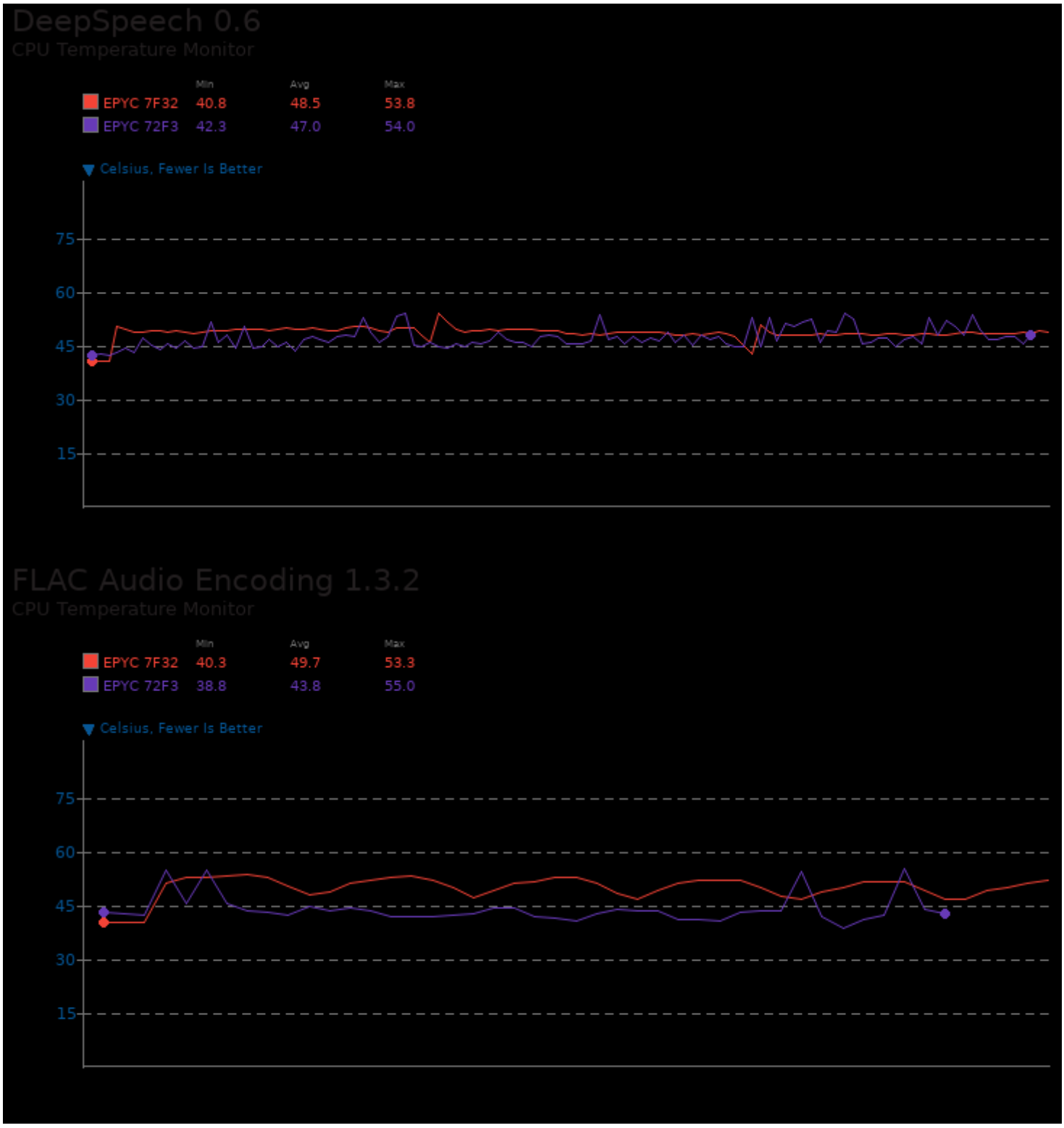

Timed Godot Game Engine Compilation 3.2.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 39.3 57.7 63.3
EPYC 72F3 40.5 54.8 64.3
Celsius, Fewer Is Better
100
80
60
40
20
Timed Linux Kernel Compilation 5.10.20
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 40.8 58.5 62.4
EPYC 72F3 42.3 56.2 64.3
Celsius, Fewer Is Better
100
80
60
40
20

AMD EPYC 72F3 Performance Benchmarks

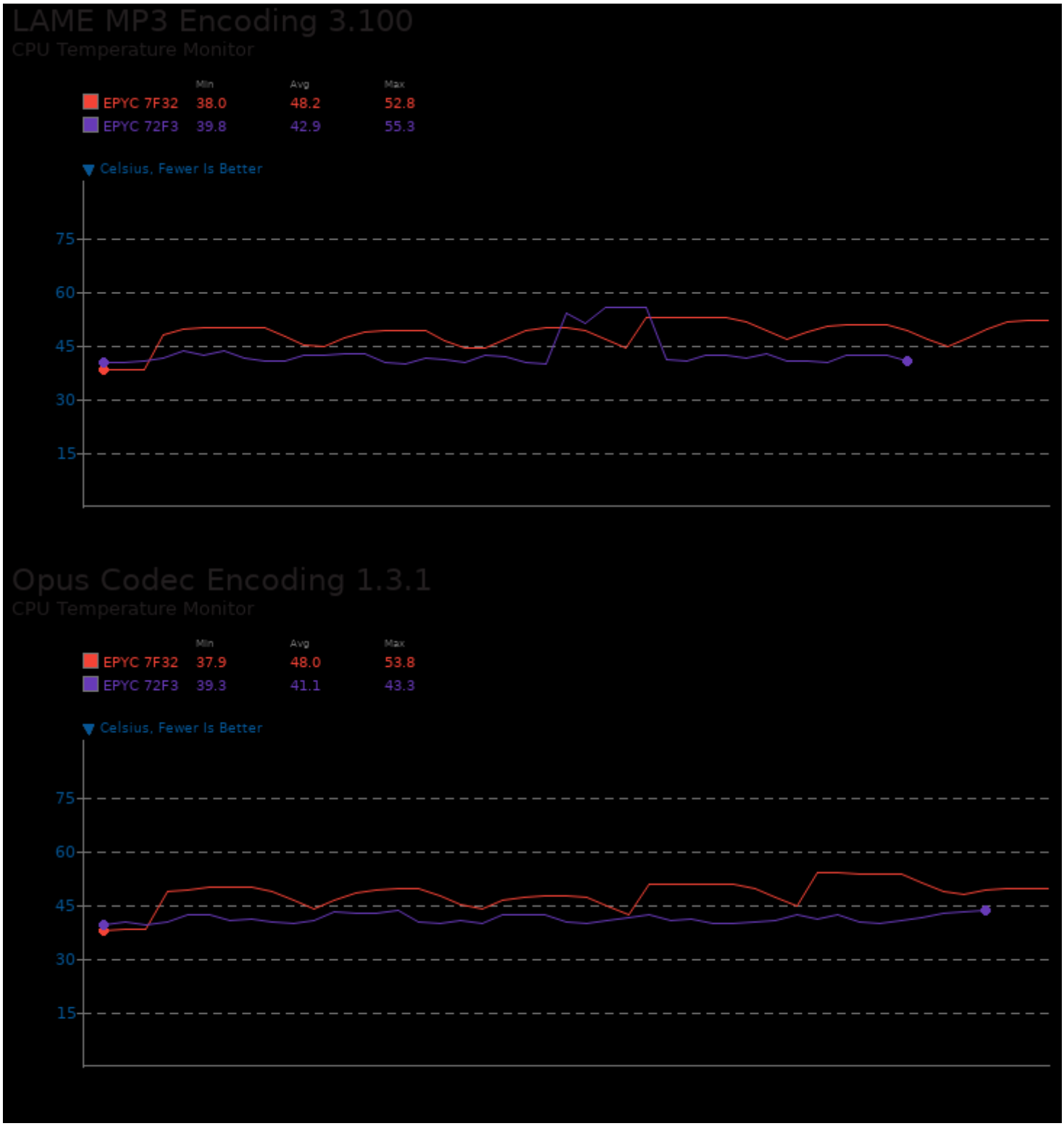



Timed Erlang/OTP Compilation 23.2
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 37.6 51.3 58.4
EPYC 72F3 38.8 49.8 62.3
Celsius, Fewer Is Better
100
80
60
40
20
Timed Wasmer Compilation 1.0.2
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 39.5 57.1 61.0
EPYC 72F3 41.8 55.9 63.3
Celsius, Fewer Is Better
100
80
60
40
20

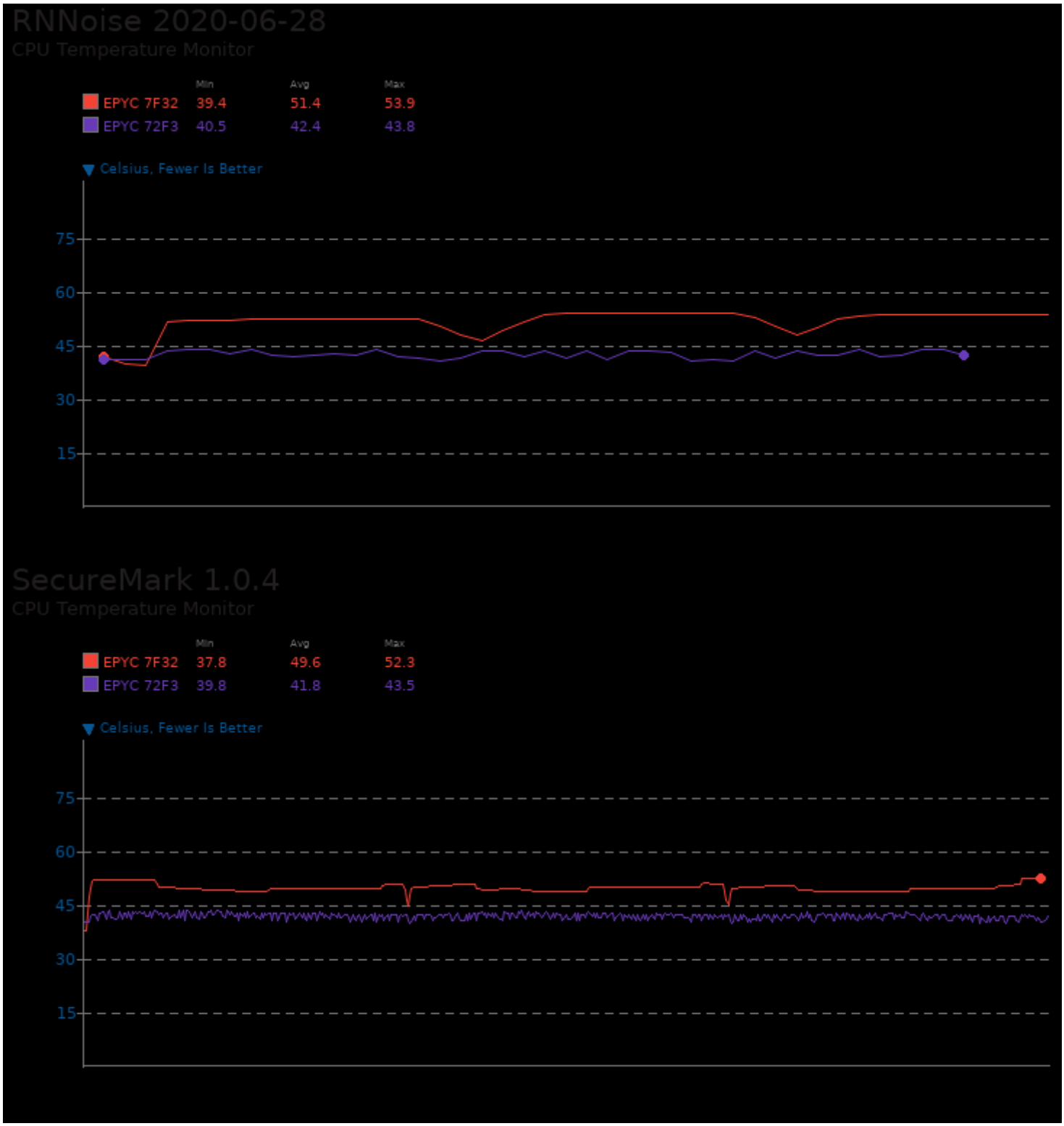
AMD EPYC 72F3 Performance Benchmarks

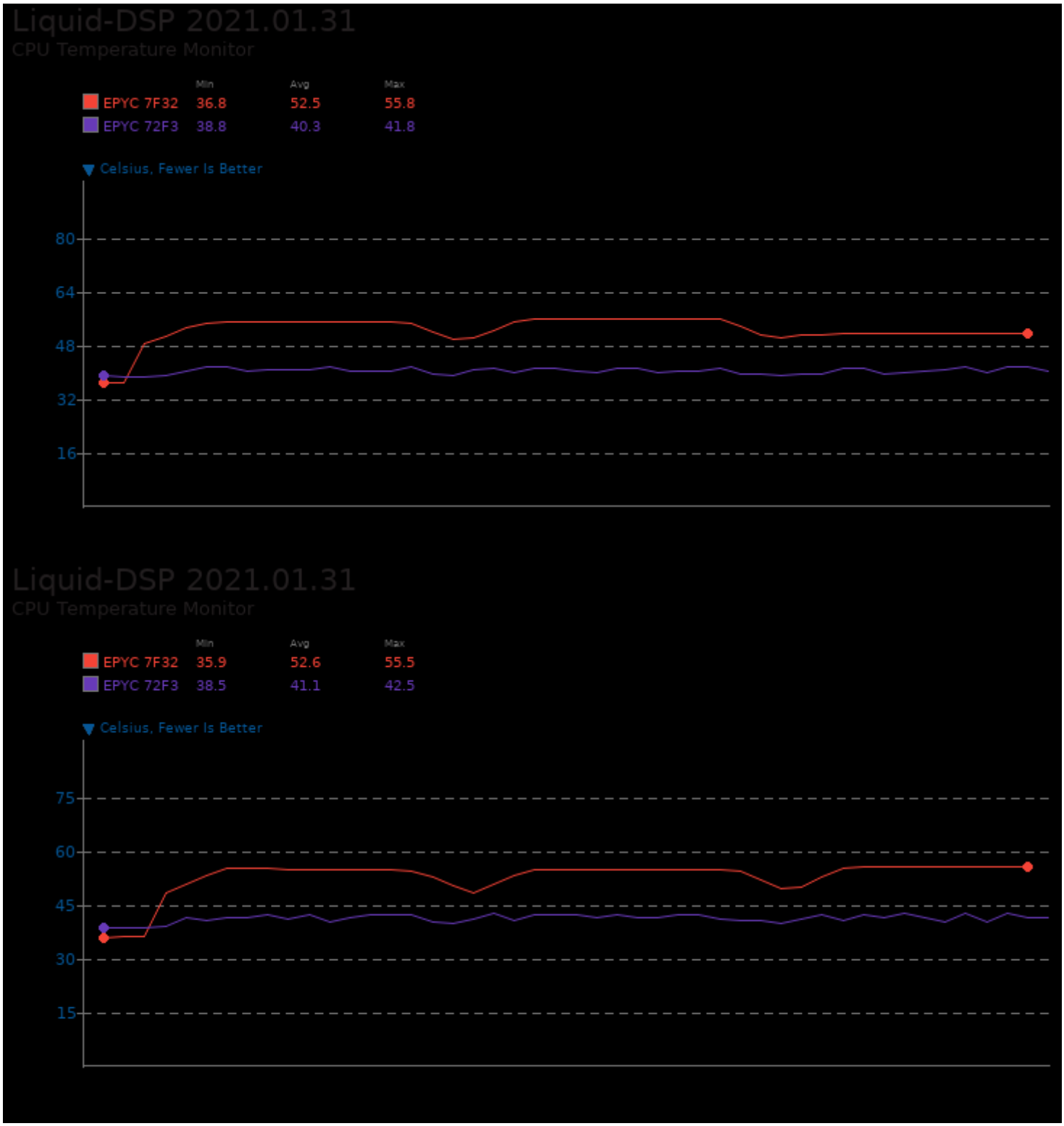


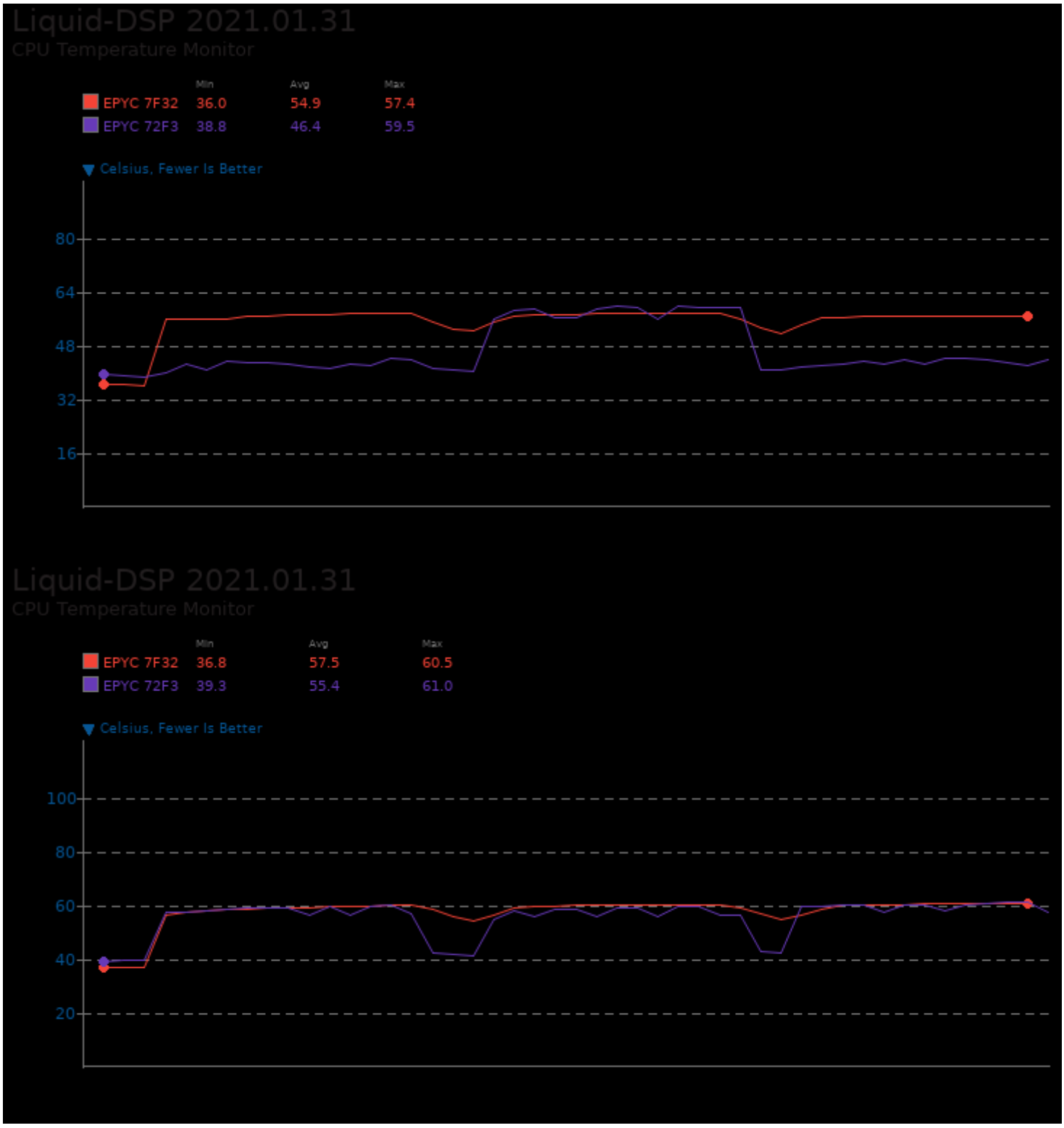
AMD EPYC 72F3 Performance Benchmarks



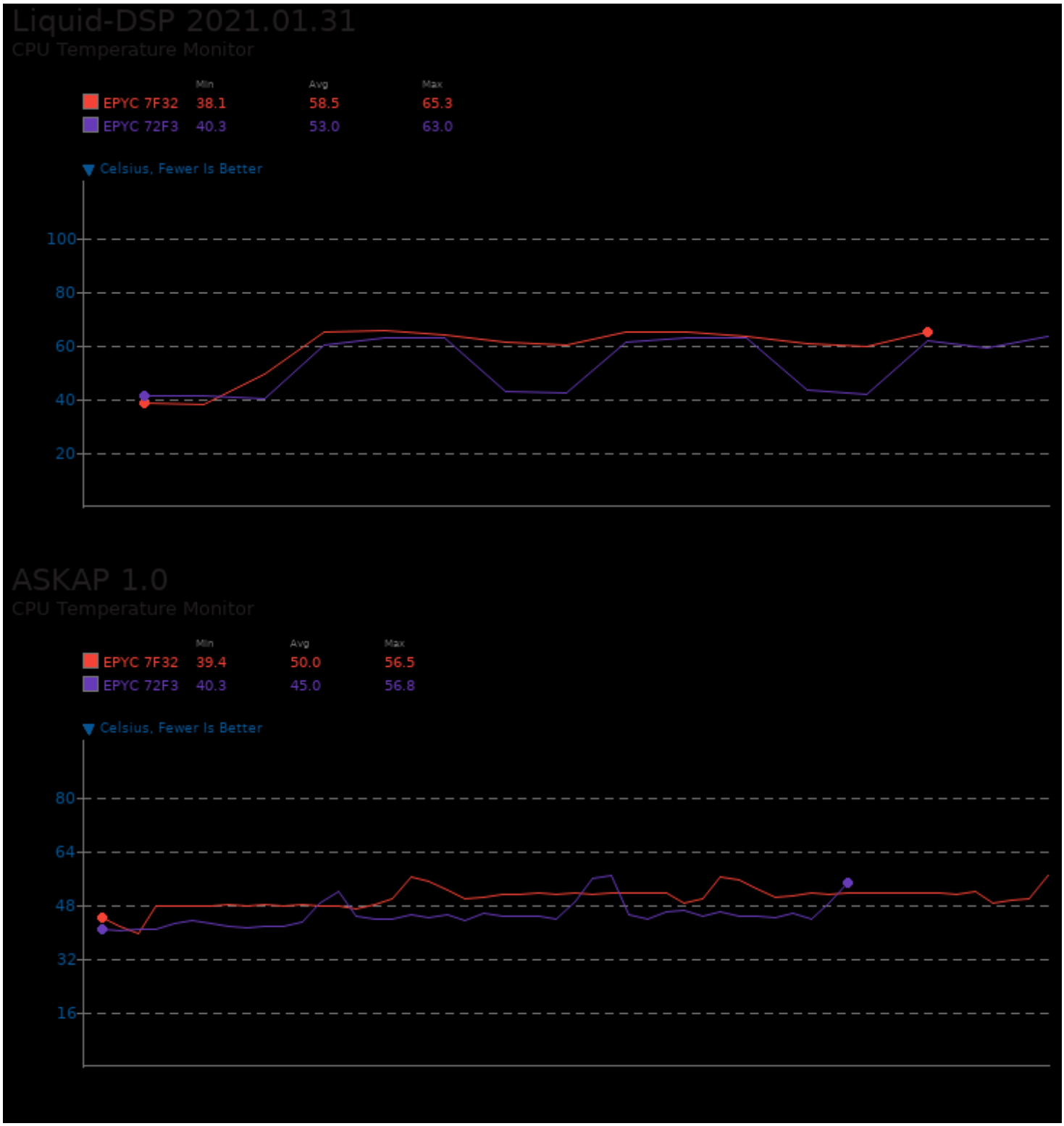
AMD EPYC 72F3 Performance Benchmarks



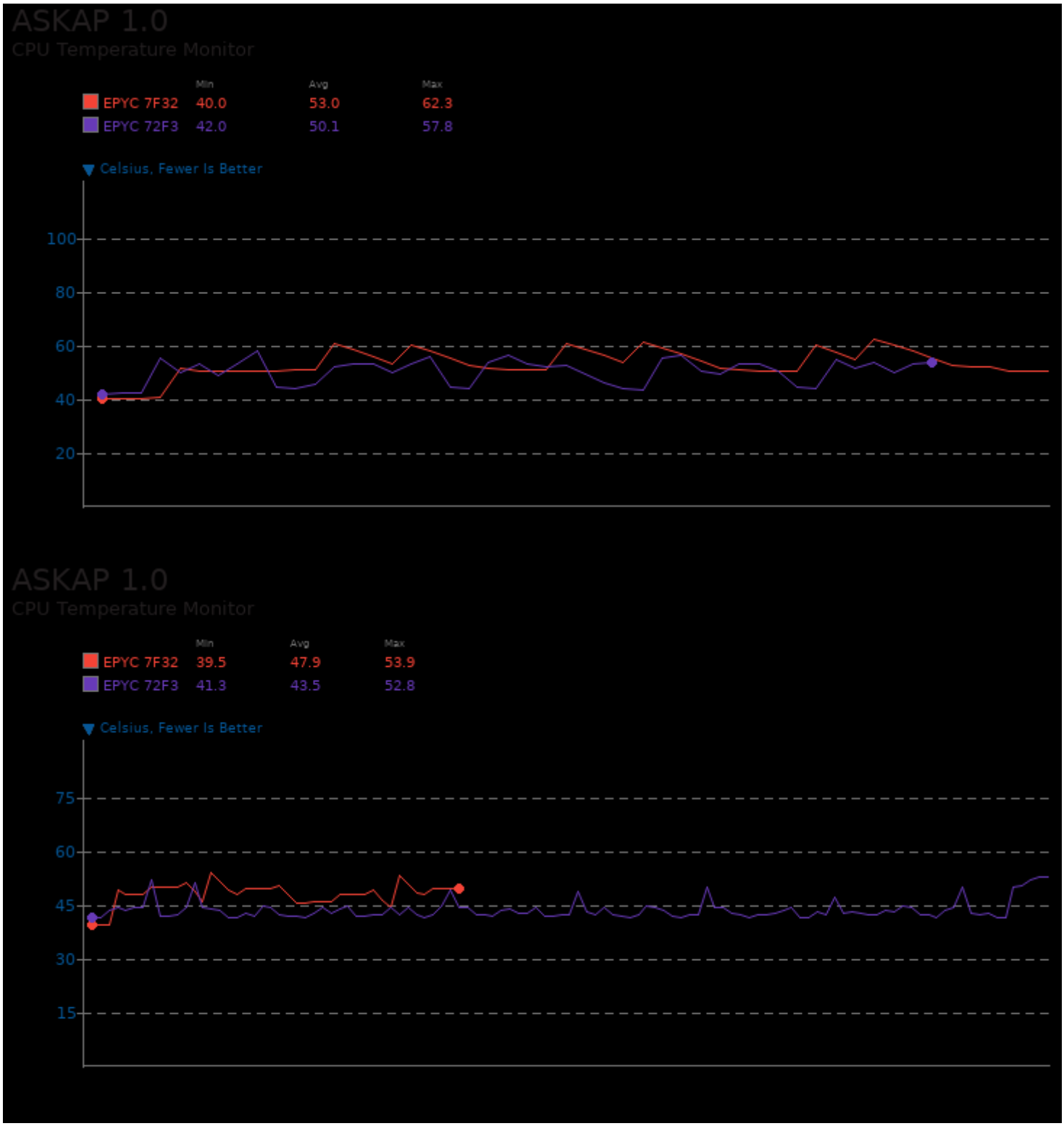

Liquid-DSP 2021.01.31
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 36.8 52.5 55.8
EPYC 72F3 38.8 40.3 41.8
Celsius, Fewer Is Better
80
64
48
32
16
Liquid-DSP 2021.01.31
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 35.9 52.6 55.5
EPYC 72F3 38.5 41.1 42.5
Celsius, Fewer Is Better
75
60
45
30
15


Liquid-DSP 2021.01.31
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 36.0 54.9 57.4
EPYC 72F3 38.8 46.4 59.5
Celsius, Fewer Is Better
80
64
48
32
16
Liquid-DSP 2021.01.31
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 36.8 57.5 60.5
EPYC 72F3 39.3 55.4 61.0
Celsius, Fewer Is Better
100
80
60
40
20

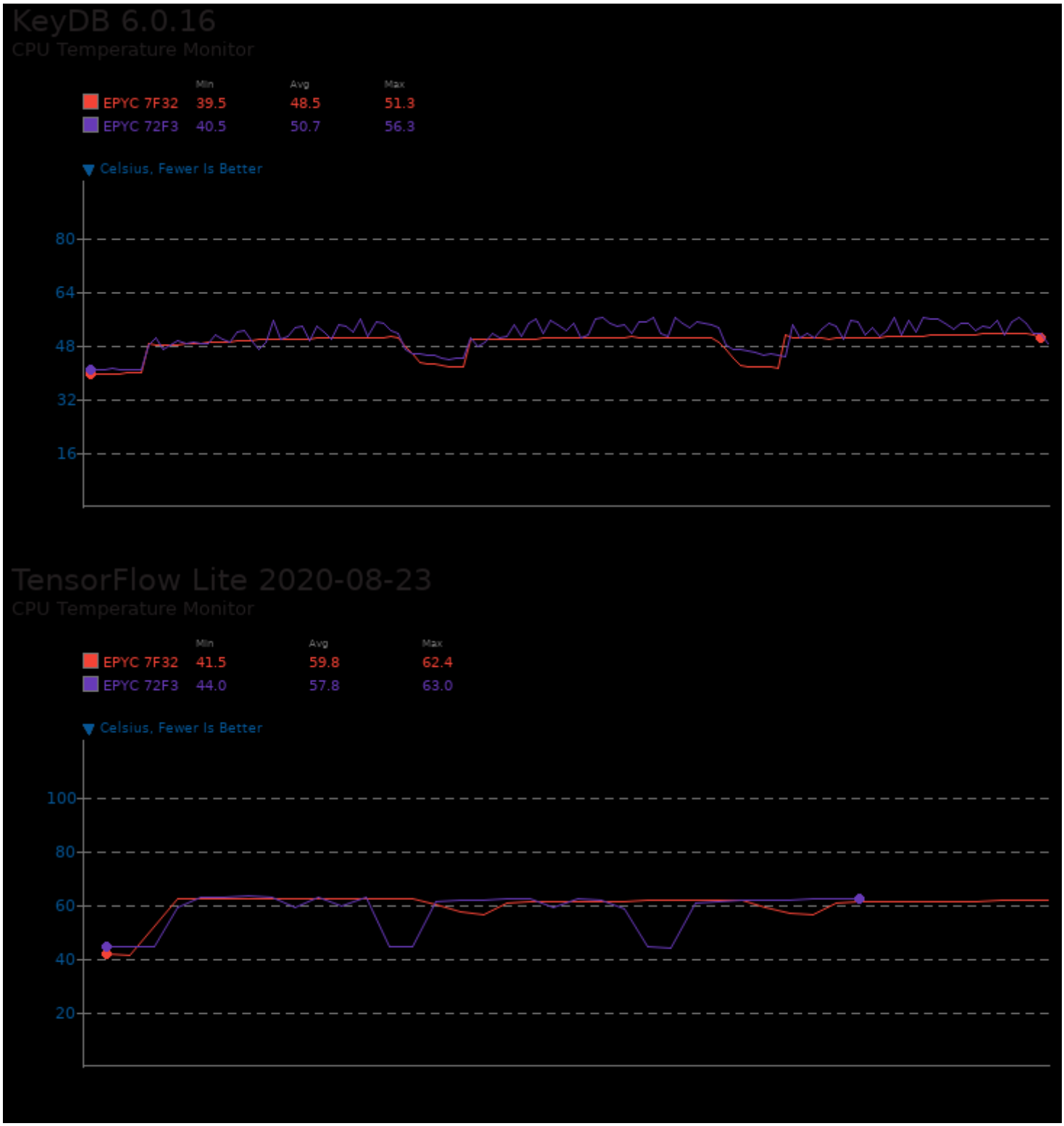
AMD EPYC 72F3 Performance Benchmarks

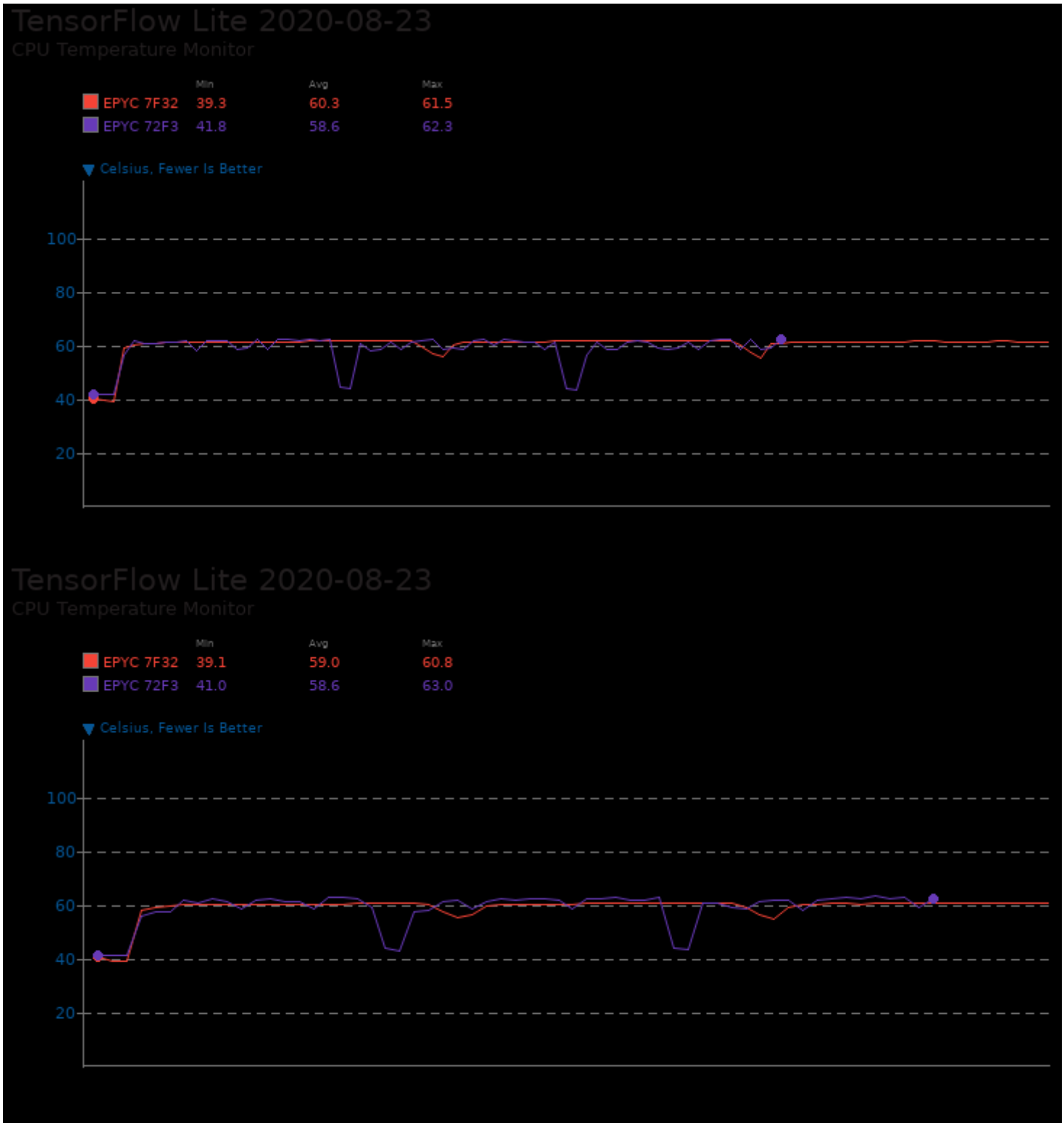


AMD EPYC 72F3 Performance Benchmarks

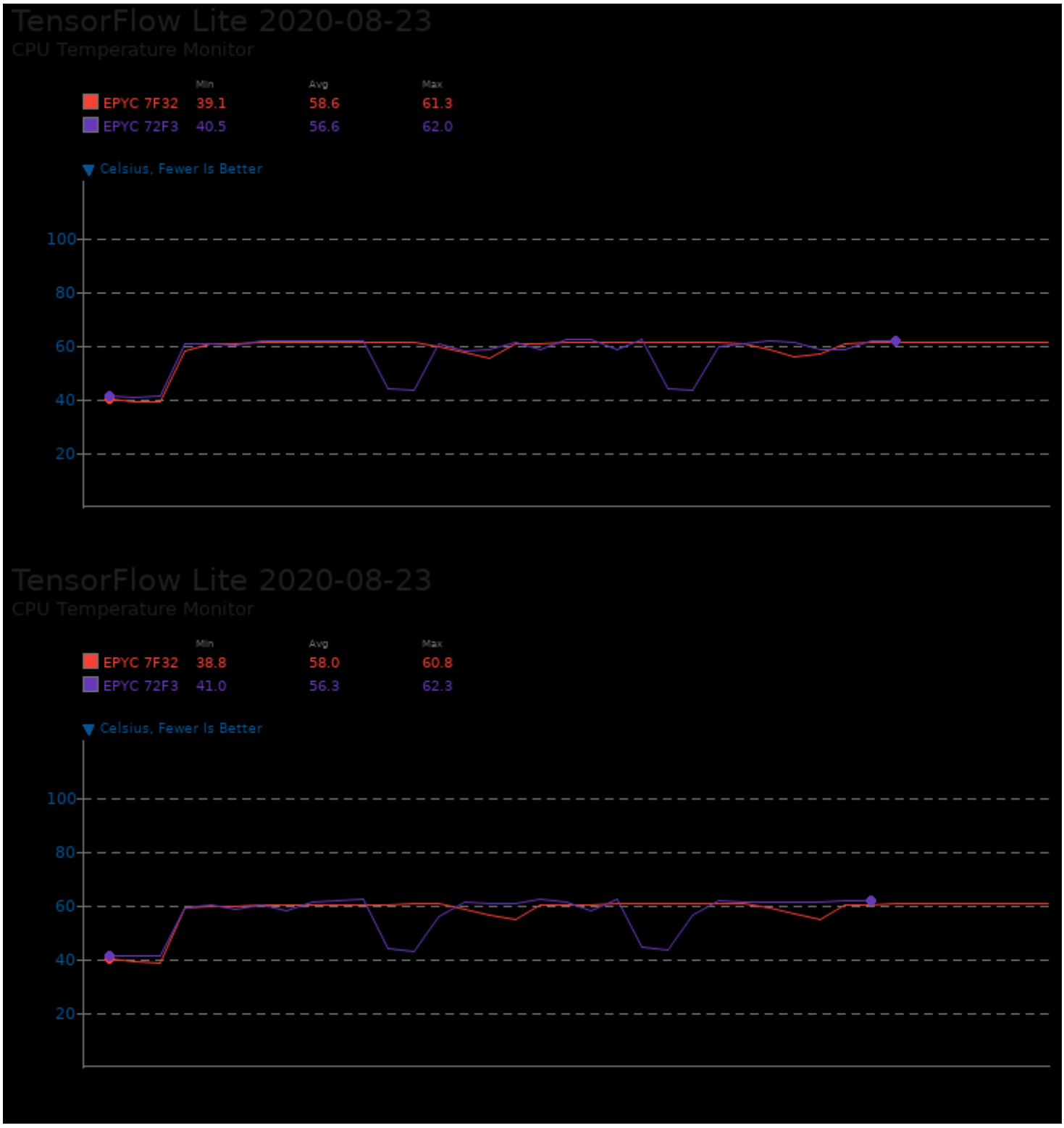


AMD EPYC 72F3 Performance Benchmarks



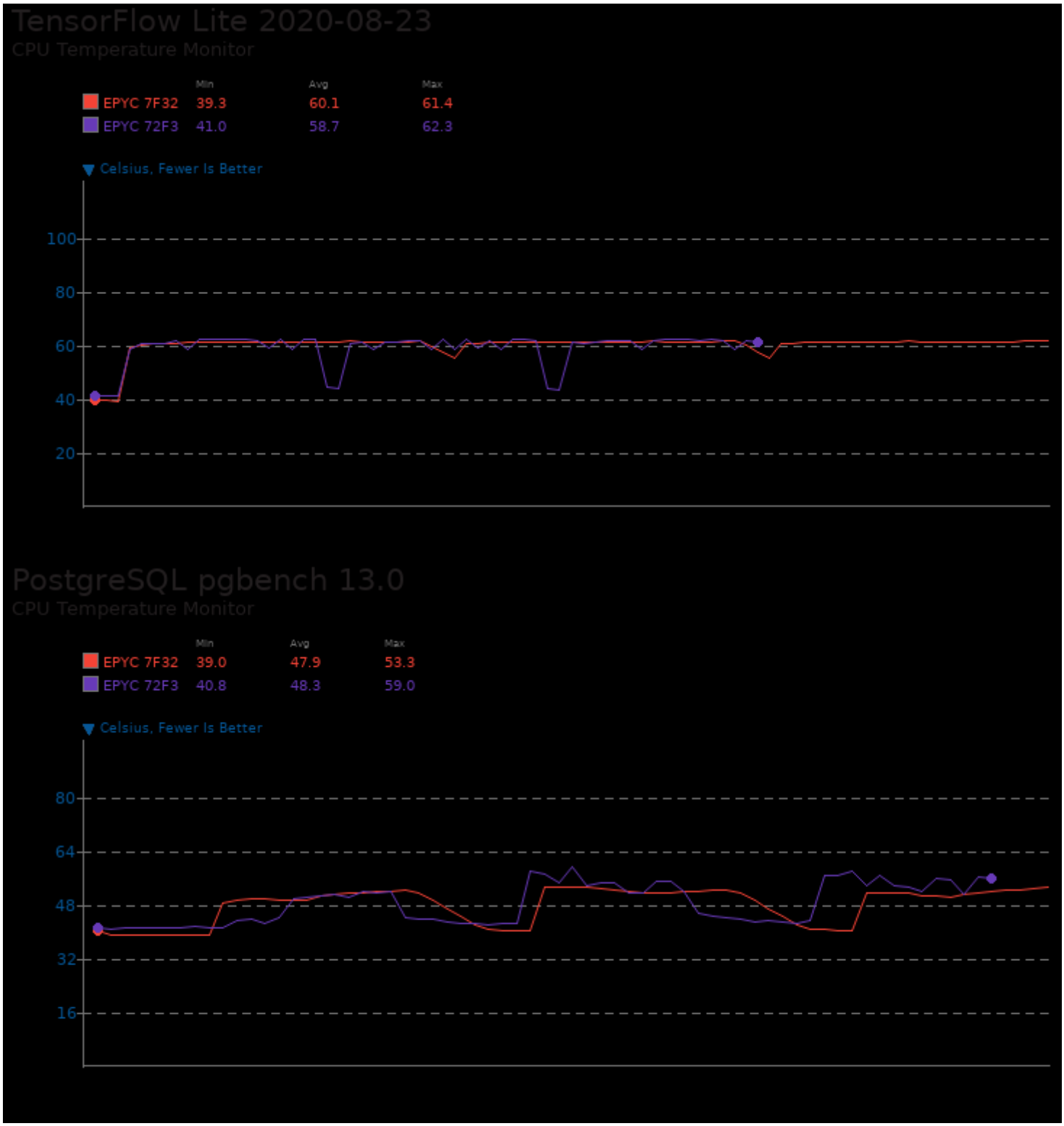

TensorFlow Lite 2020-08-23
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 39.3 60.3 61.5
EPYC 72F3 41.8 58.6 62.3
Celsius, Fewer Is Better
100
80
60
40
20

TensorFlow Lite 2020-08-23
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 39.1 59.0 60.8
EPYC 72F3 41.0 58.6 63.0
Celsius, Fewer Is Better
100
80
60
40
20

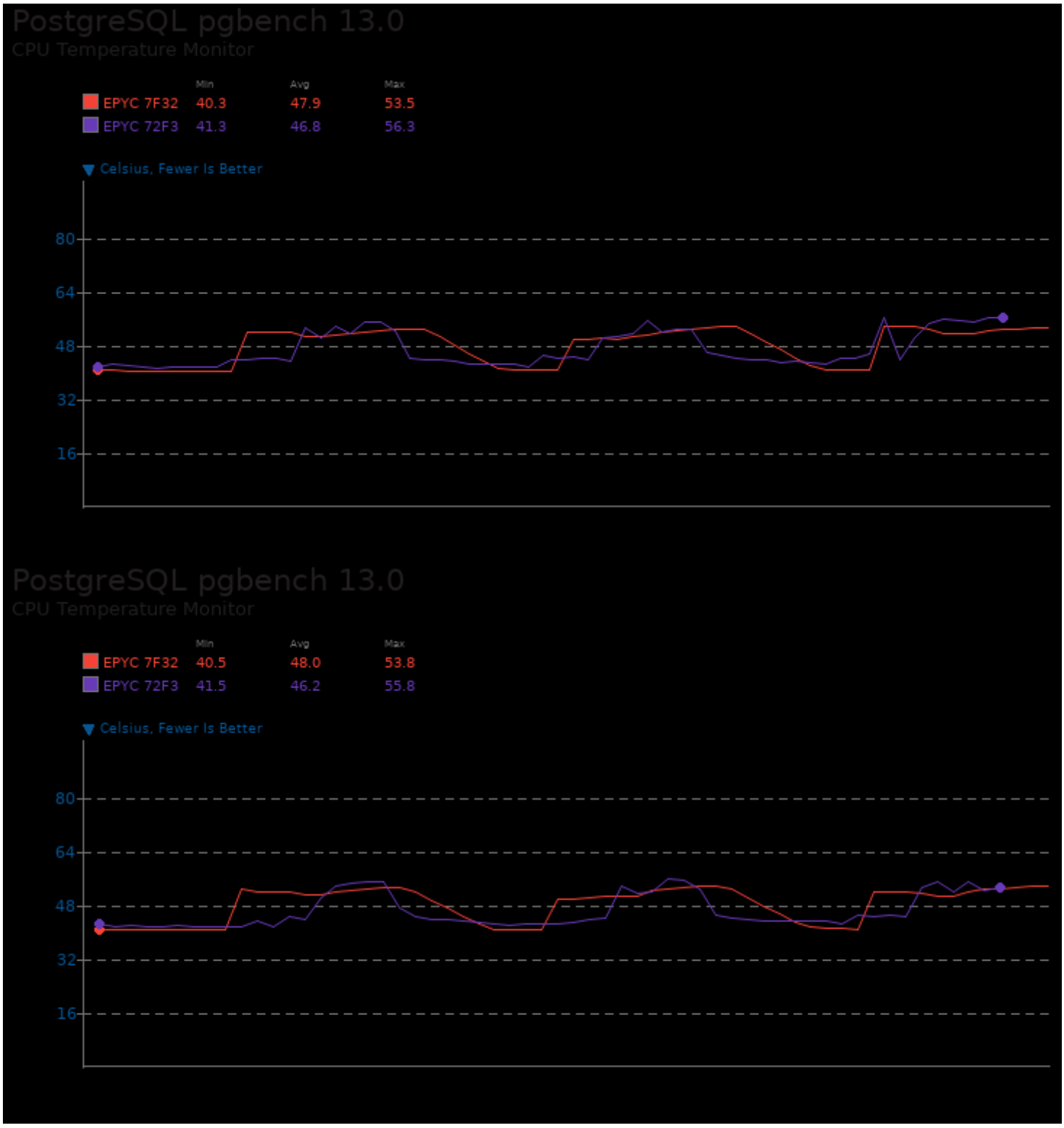

TensorFlow Lite 2020-08-23
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 39.1 58.6 61.3
EPYC 72F3 40.5 56.6 62.0
Celsius, Fewer Is Better
100
80
60
40
20

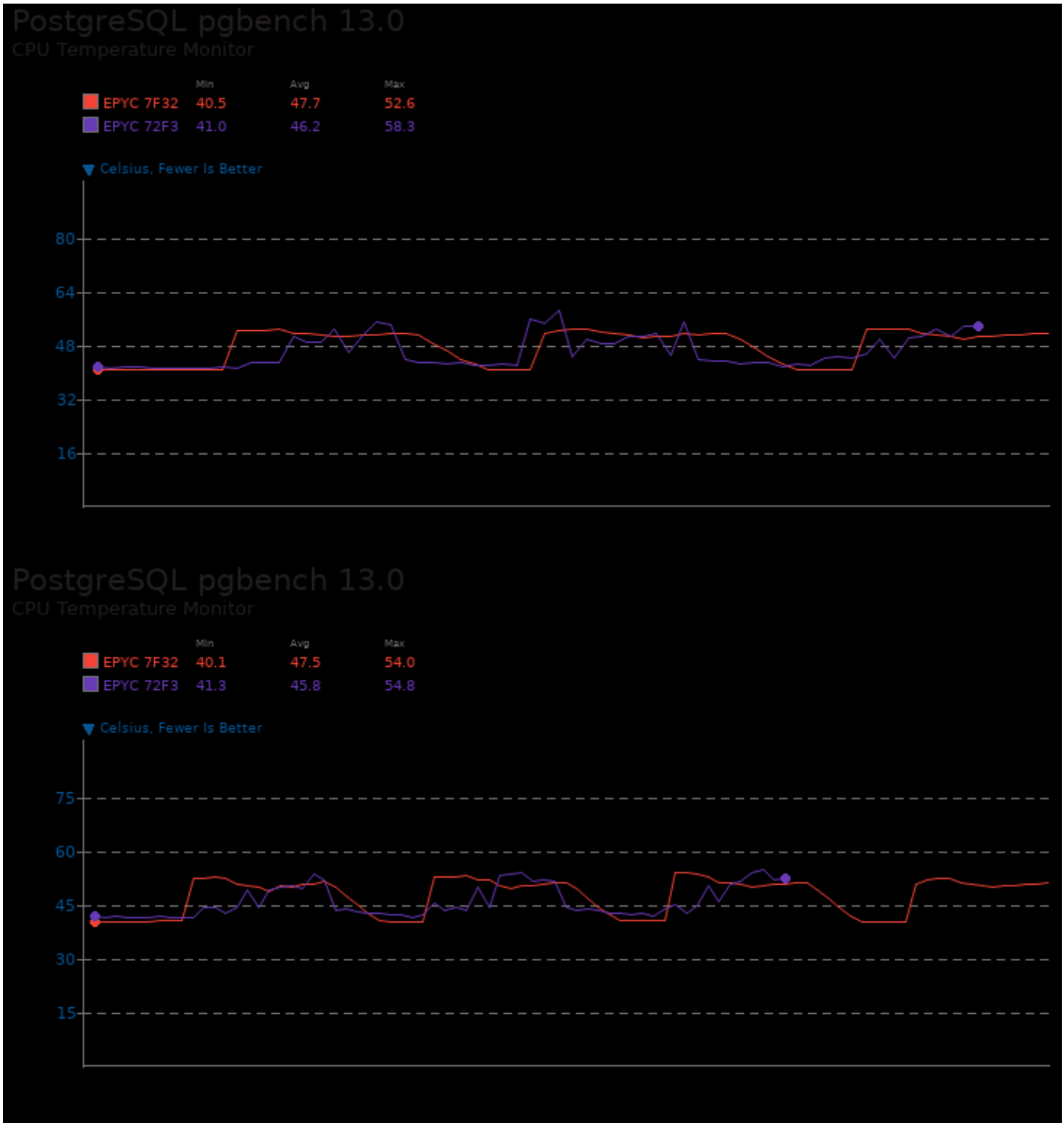
TensorFlow Lite 2020-08-23
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.8 58.0 60.8
EPYC 72F3 41.0 56.3 62.3
Celsius, Fewer Is Better
100
80
60
40
20

AMD EPYC 72F3 Performance Benchmarks

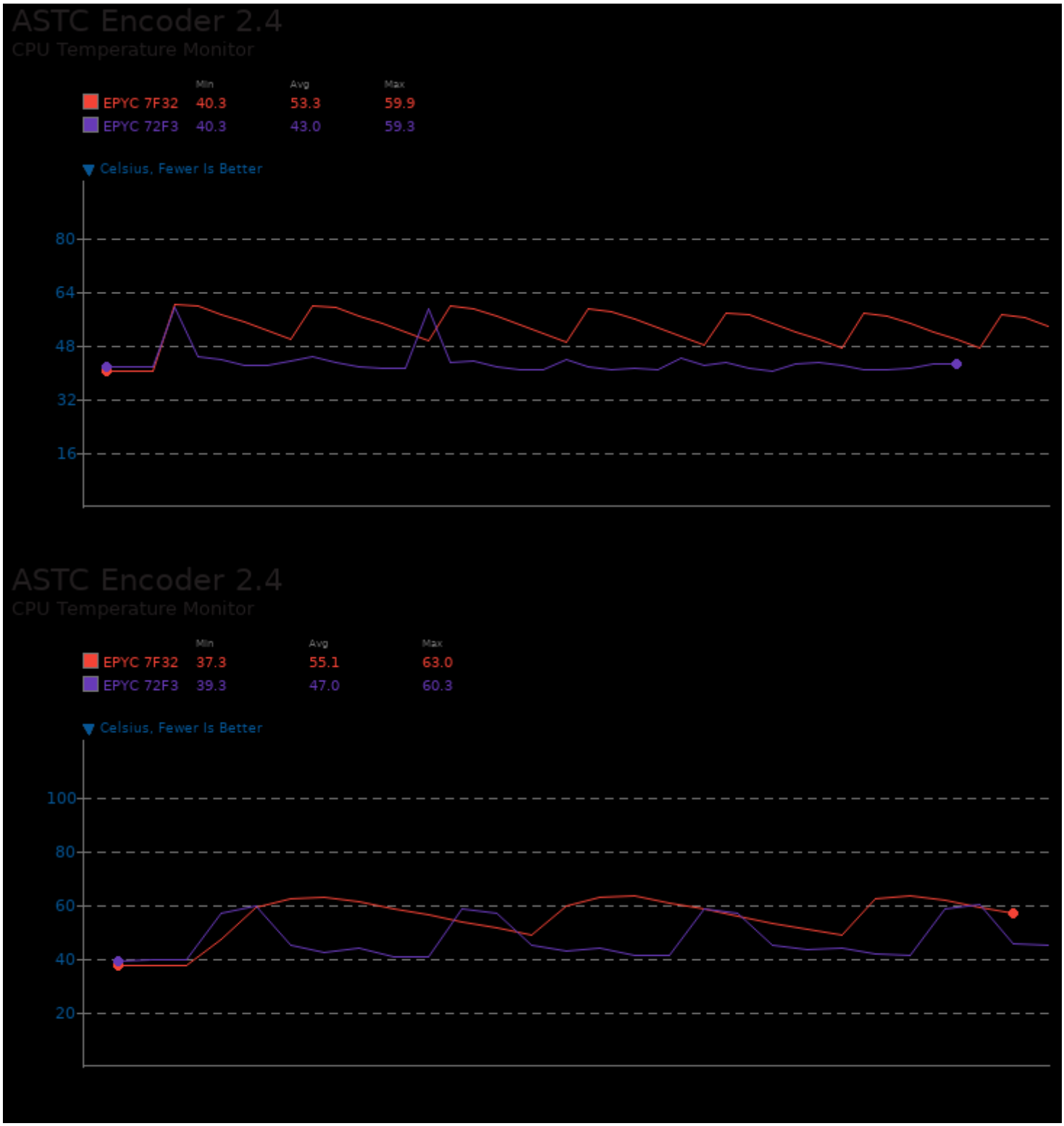


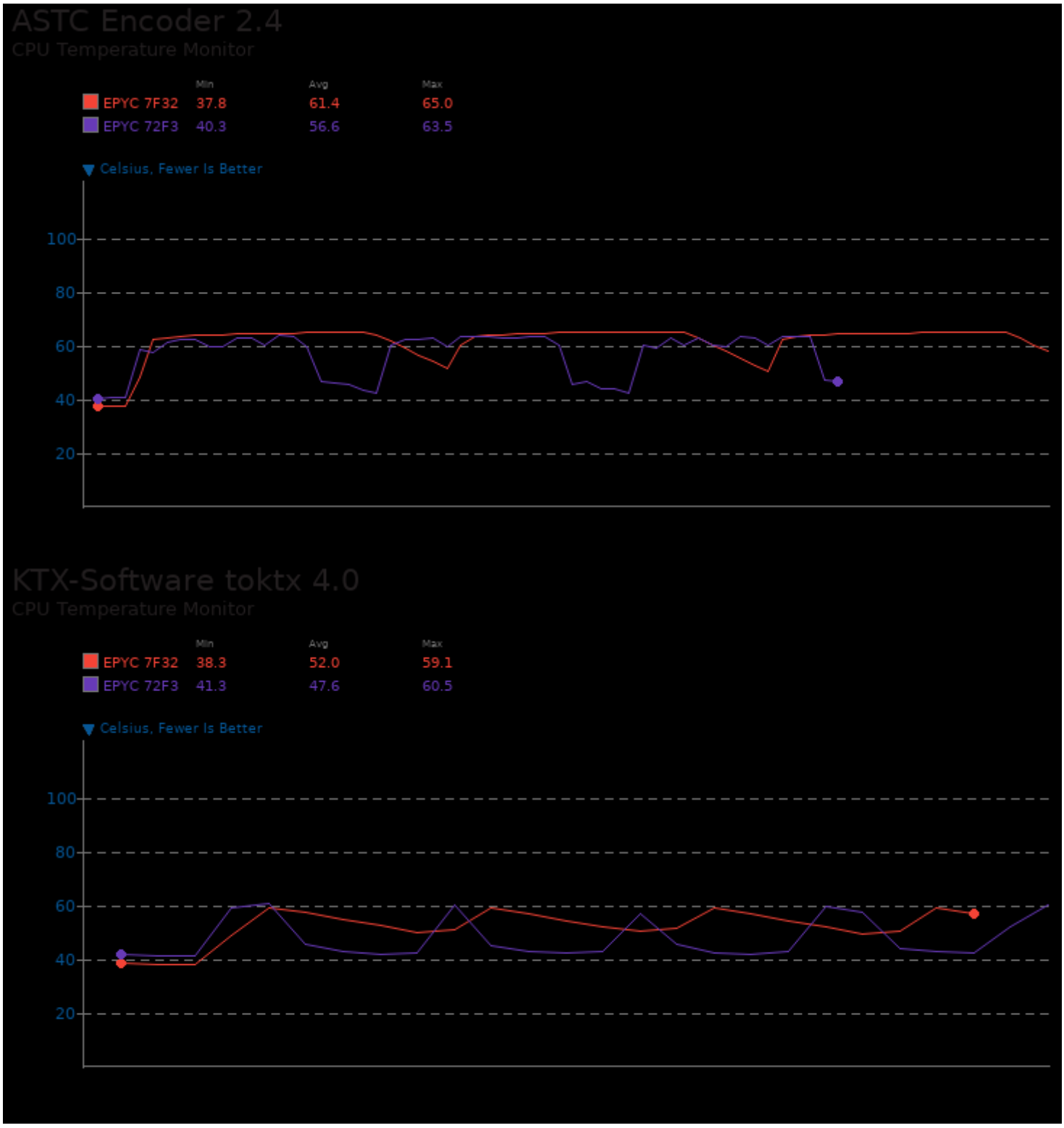
AMD EPYC 72F3 Performance Benchmarks

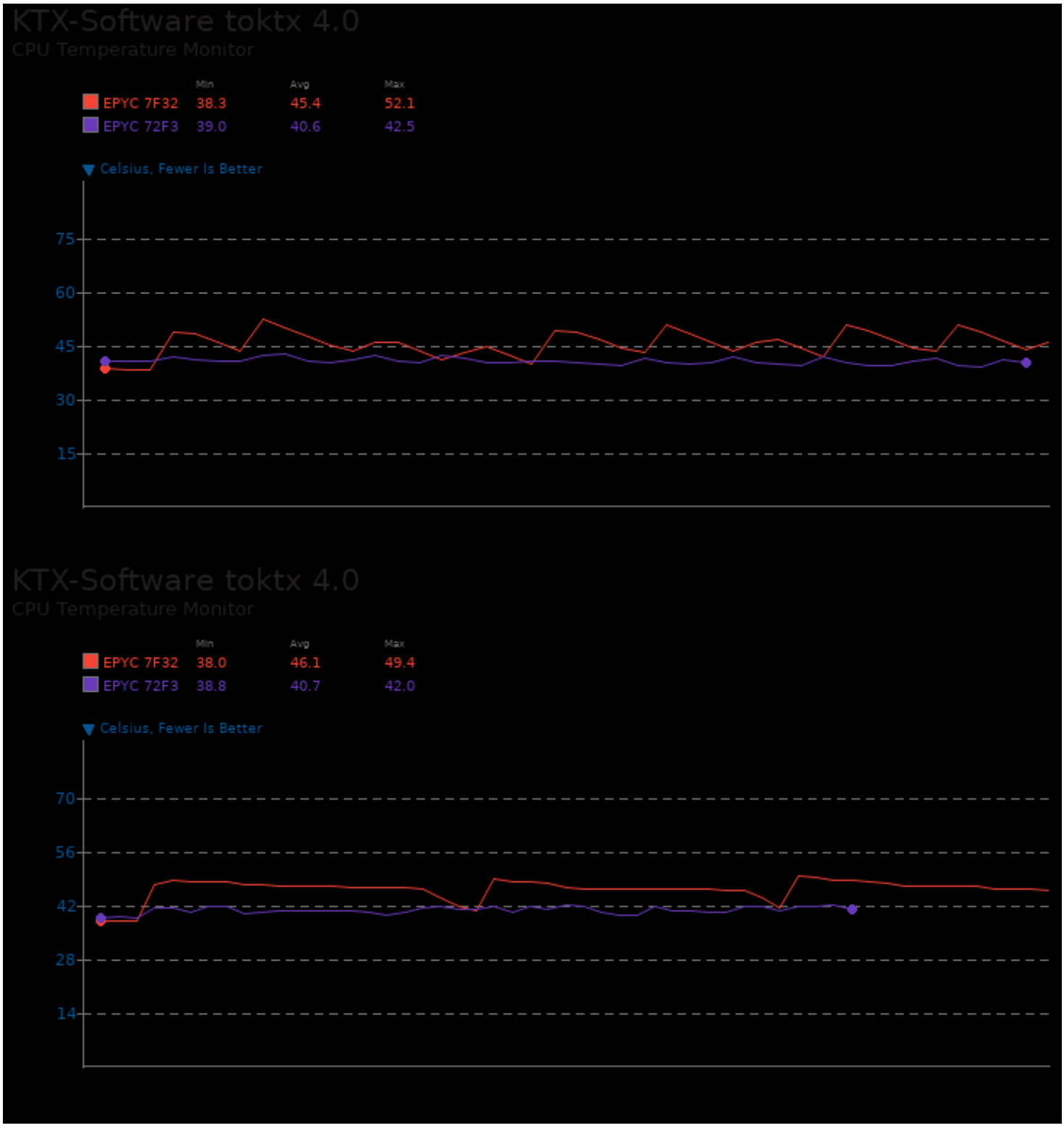


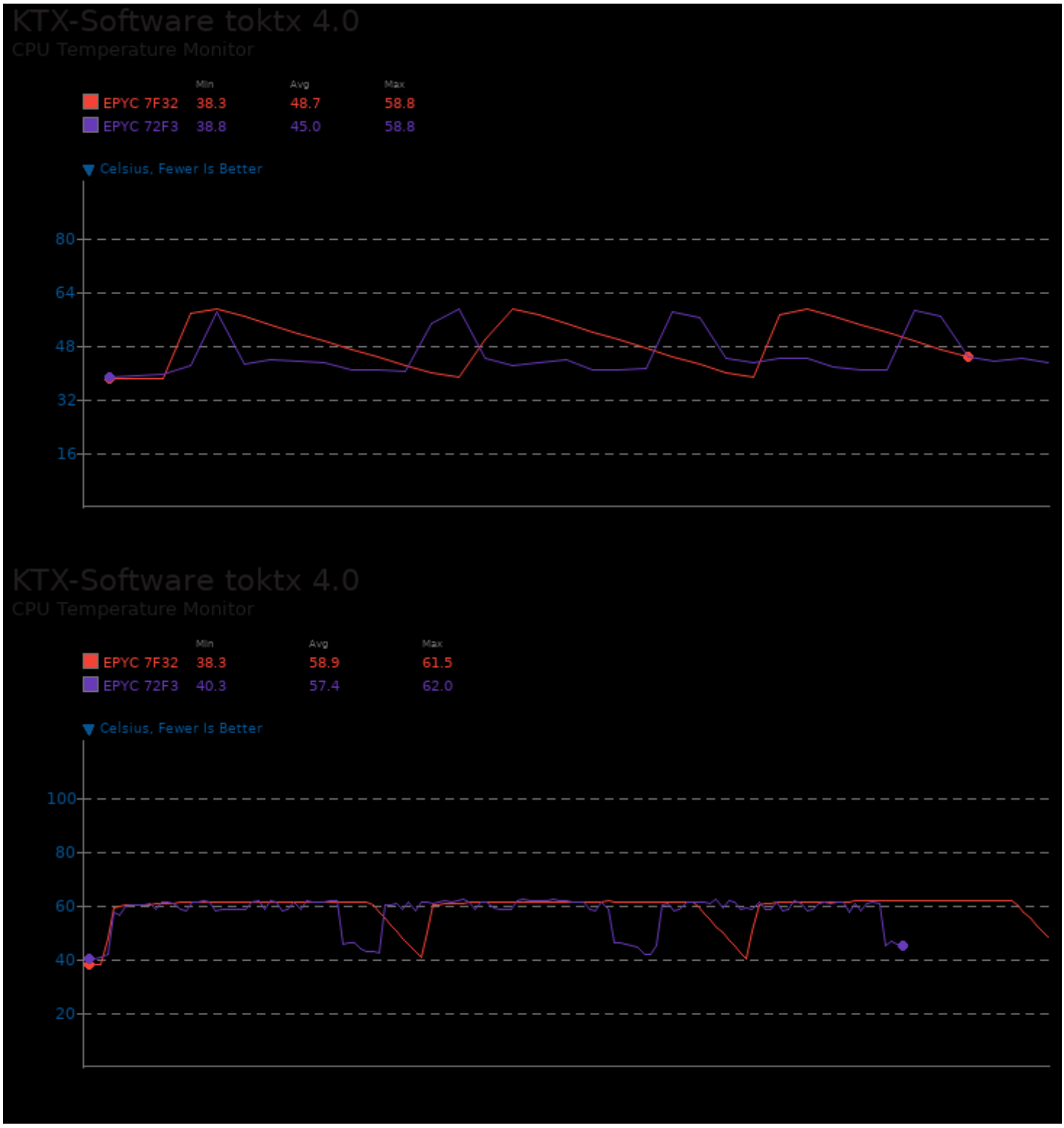

PostgreSQL pgbench 13.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 40.5 47.7 52.6
EPYC 72F3 41.0 46.2 58.3
Celsius, Fewer Is Better
80
64
48
32
16

PostgreSQL pgbench 13.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 40.1 47.5 54.0
EPYC 72F3 41.3 45.8 54.8
Celsius, Fewer Is Better
75
60
45
30
15

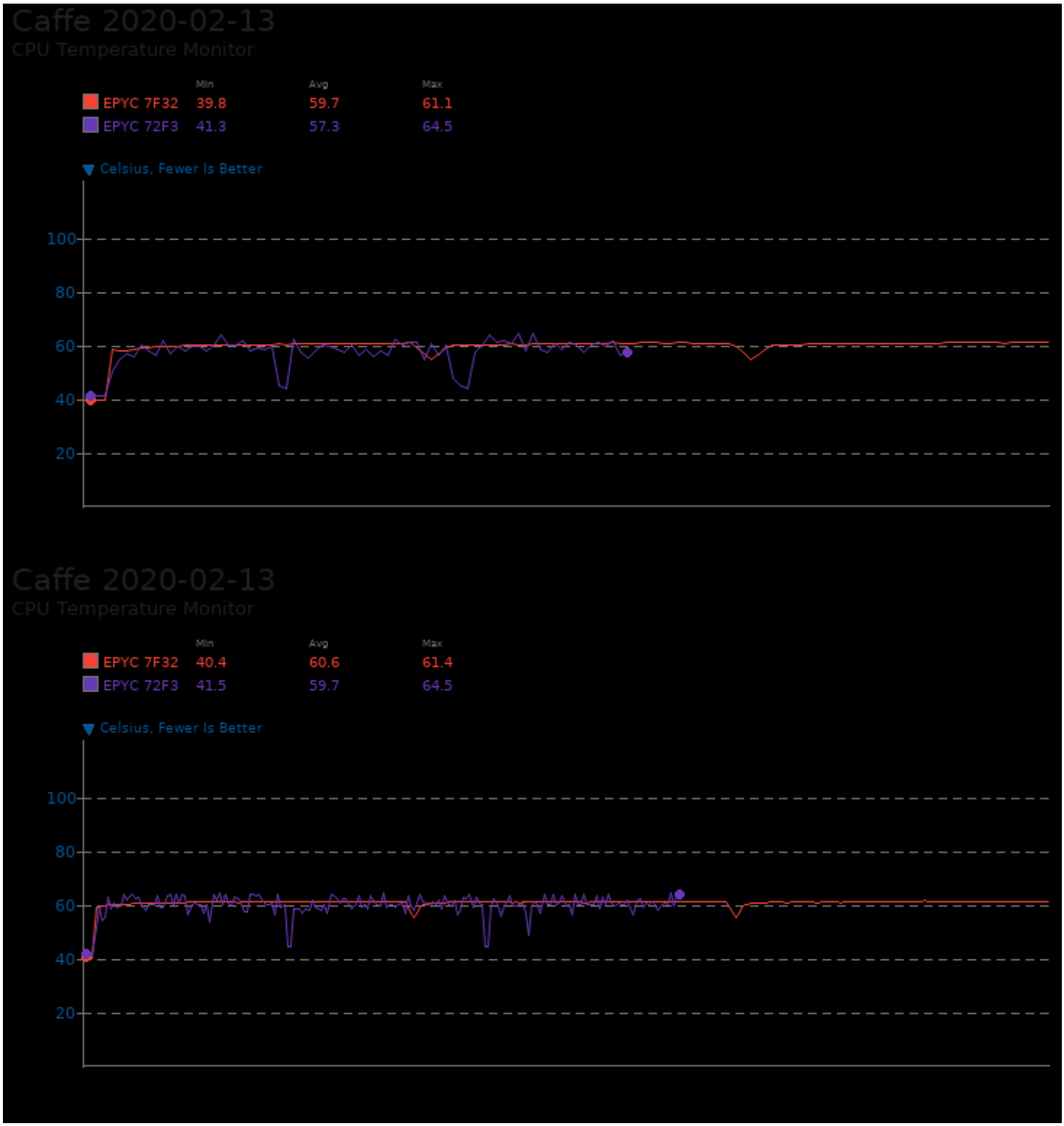

ASTC Encoder 2.4
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 40.3 53.3 59.9
EPYC 72F3 40.3 43.0 59.3
Celsius, Fewer Is Better
80
64
48
32
16
ASTC Encoder 2.4
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 37.3 55.1 63.0
EPYC 72F3 39.3 47.0 60.3
Celsius, Fewer Is Better
100
80
60
40
20

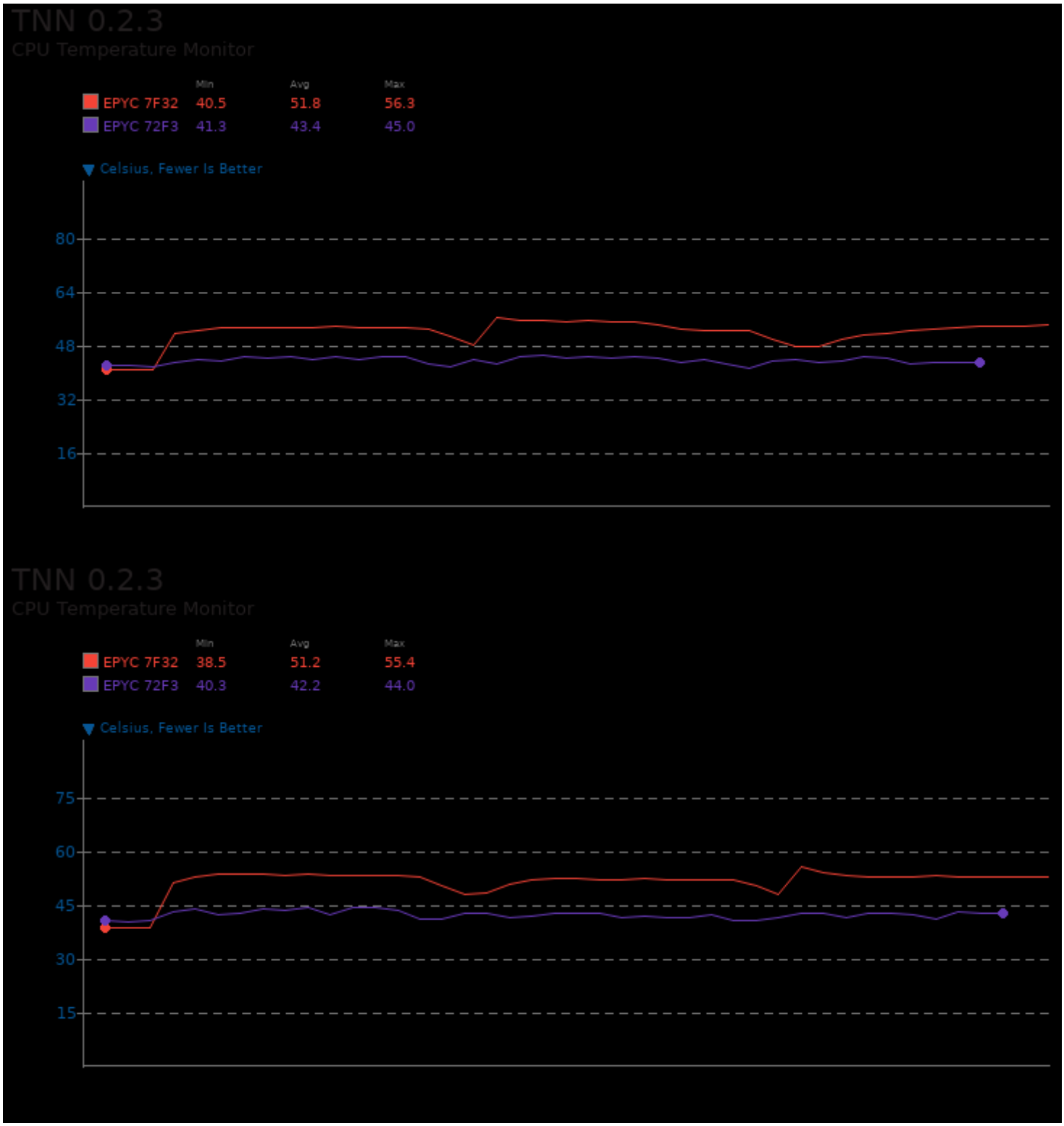

ASTC Encoder 2.4
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 37.8 61.4 65.0
EPYC 72F3 40.3 56.6 63.5
Celsius, Fewer Is Better
100
80
60
40
20
KTX-Software toktx 4.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.3 52.0 59.1
EPYC 72F3 41.3 47.6 60.5
Celsius, Fewer Is Better
100
80
60
40
20


KTX-Software toktx 4.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.3 45.4 52.1
EPYC 72F3 39.0 40.6 42.5
Celsius, Fewer Is Better
75
60
45
30
15
KTX-Software toktx 4.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.0 46.1 49.4
EPYC 72F3 38.8 40.7 42.0
Celsius, Fewer Is Better
70
56
42
28
14


KTX-Software toktx 4.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.3 48.7 58.8
EPYC 72F3 38.8 45.0 58.8
Celsius, Fewer Is Better
80
64
48
32
16

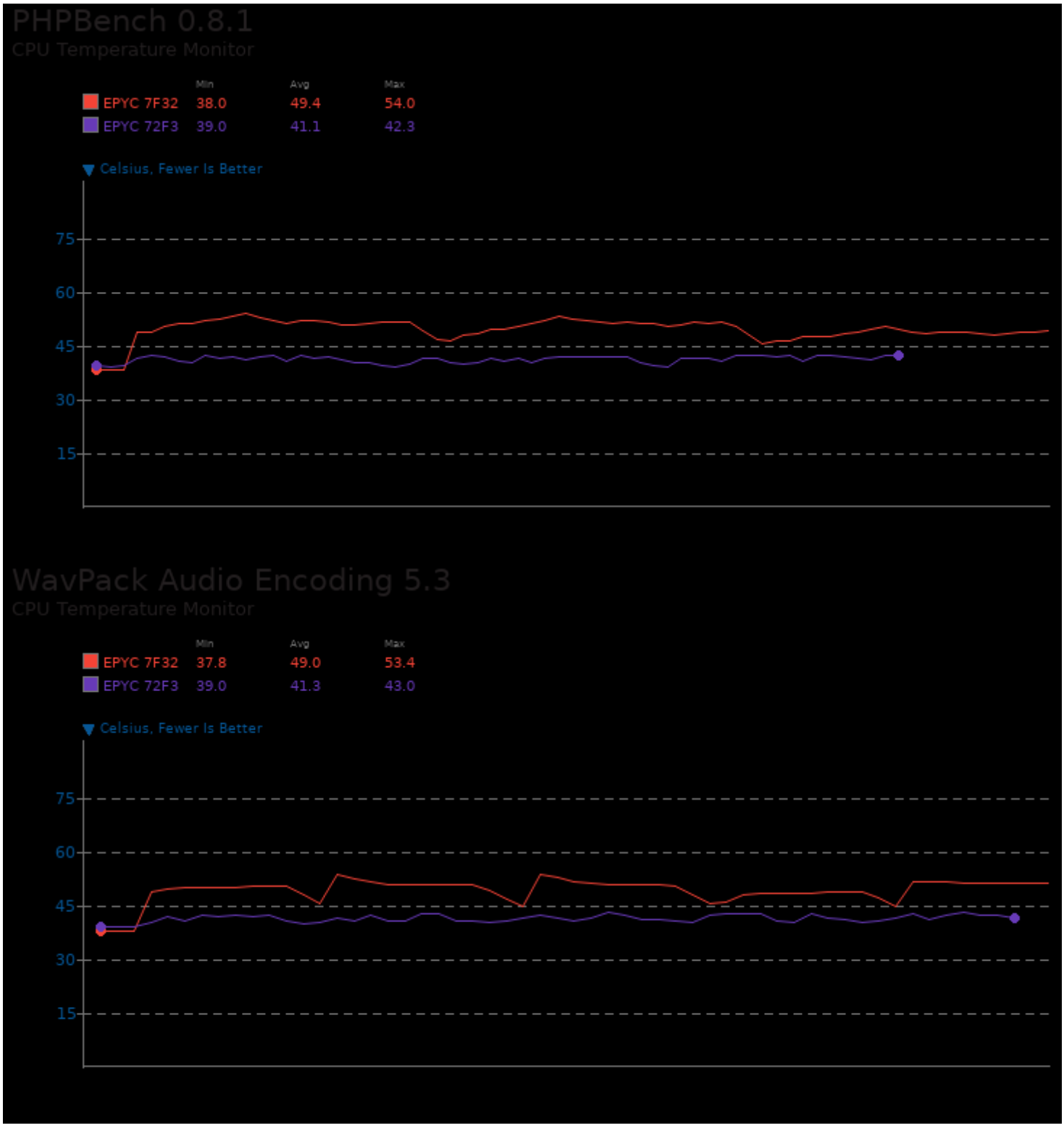
KTX-Software toktx 4.0
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.3 58.9 61.5
EPYC 72F3 40.3 57.4 62.0
Celsius, Fewer Is Better
100
80
60
40
20


Caffe 2020-02-13
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 39.8 59.7 61.1
EPYC 72F3 41.3 57.3 64.5
Celsius, Fewer Is Better
100
80
60
40
20
Caffe 2020-02-13
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 40.4 60.6 61.4
EPYC 72F3 41.5 59.7 64.5
Celsius, Fewer Is Better
100
80
60
40
20

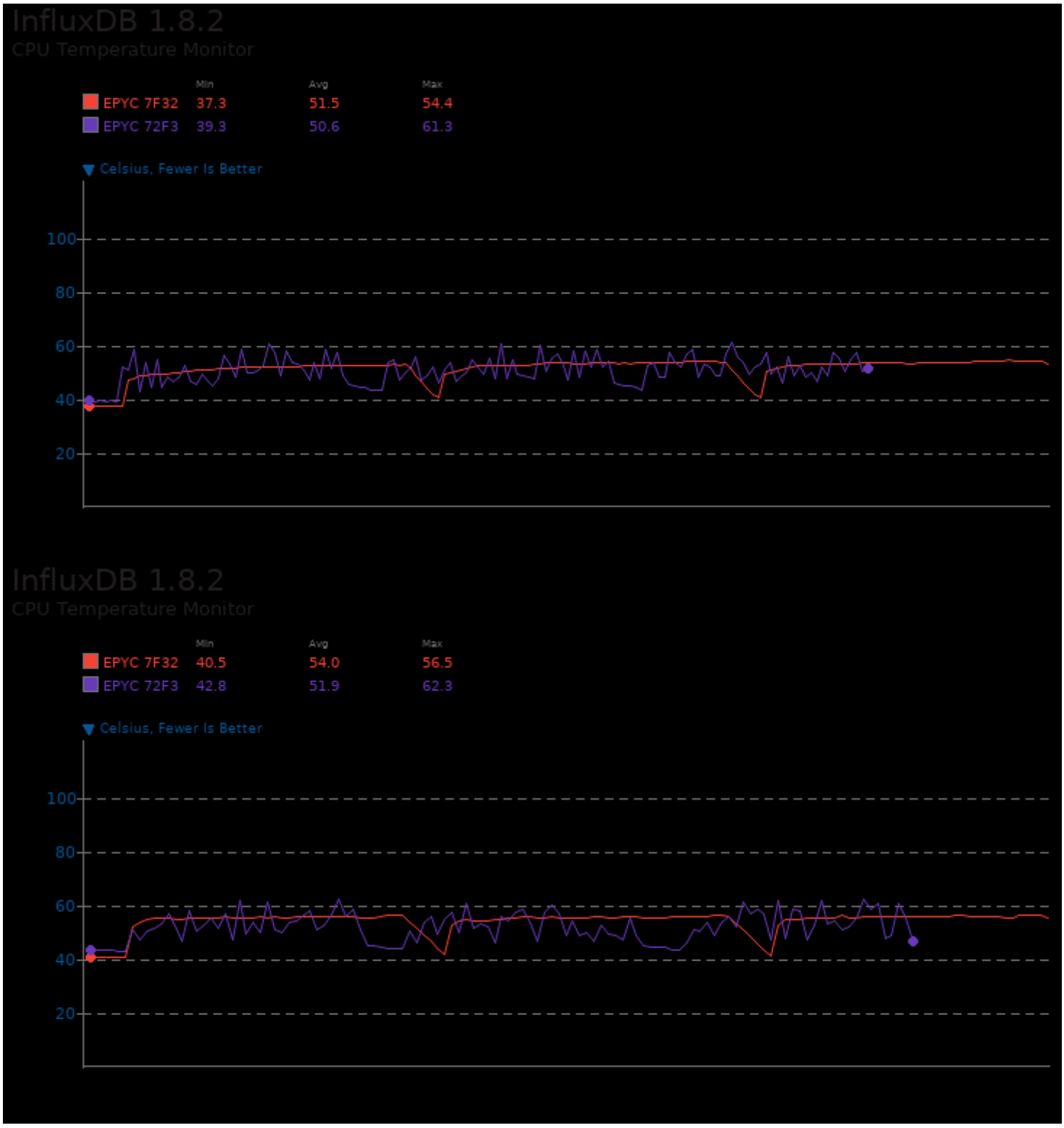

TNN 0.2.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 40.5 51.8 56.3
EPYC 72F3 41.3 43.4 45.0
Celsius, Fewer Is Better
80
64
48
32
16
TNN 0.2.3
CPU Temperature Monitor
Min
Avg
Max
EPYC 7F32 38.5 51.2 55.4
EPYC 72F3 40.3 42.2 44.0
Celsius, Fewer Is Better
75
60
45
30
15

AMD EPYC 72F3 Performance Benchmarks

AMD EPYC 72F3 Performance Benchmarks



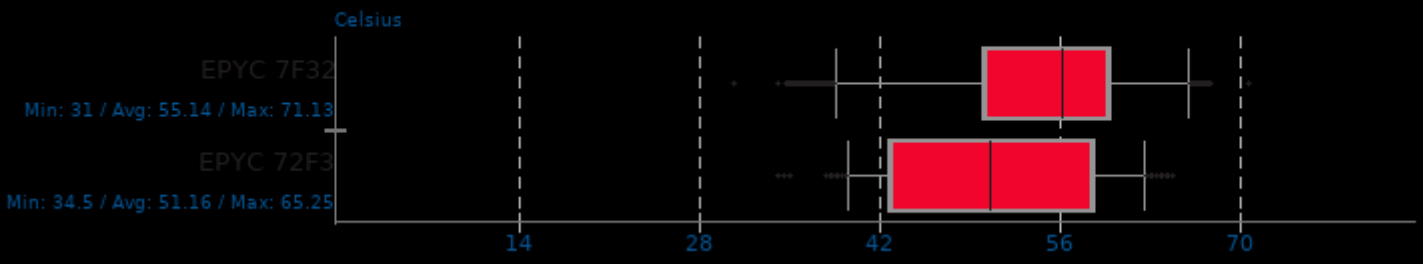
AMD EPYC 72F3 Performance Benchmarks



AMD EPYC 72F3 Performance Benchmarks

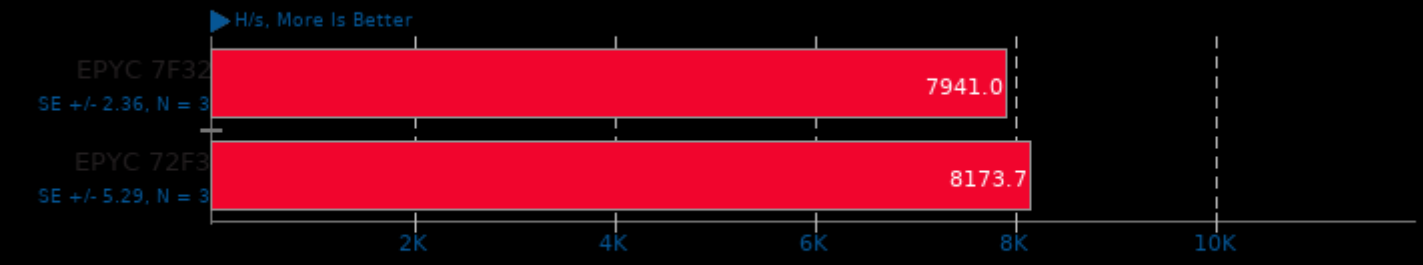
CPU Temperature Monitor

Phoronix Test Suite System Monitoring



Xmrig 6.12.1

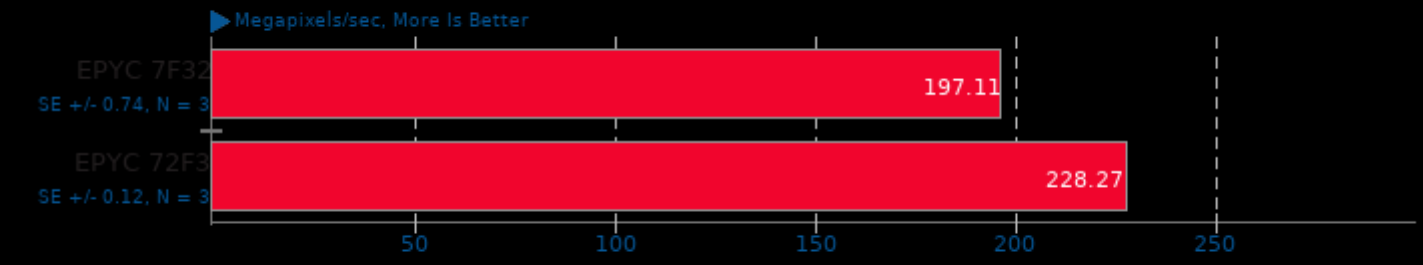
Variant: Wownero - Hash Count: 1M



1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

libjpeg-turbo tjbench 2.1.0

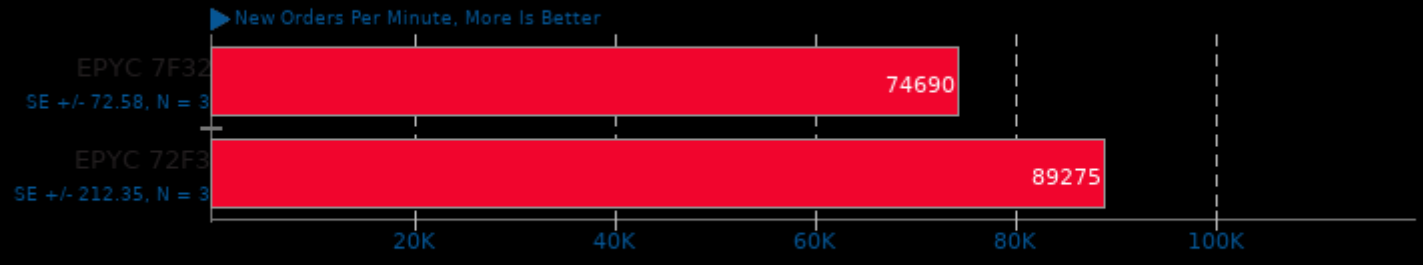
Test: Decompression Throughput



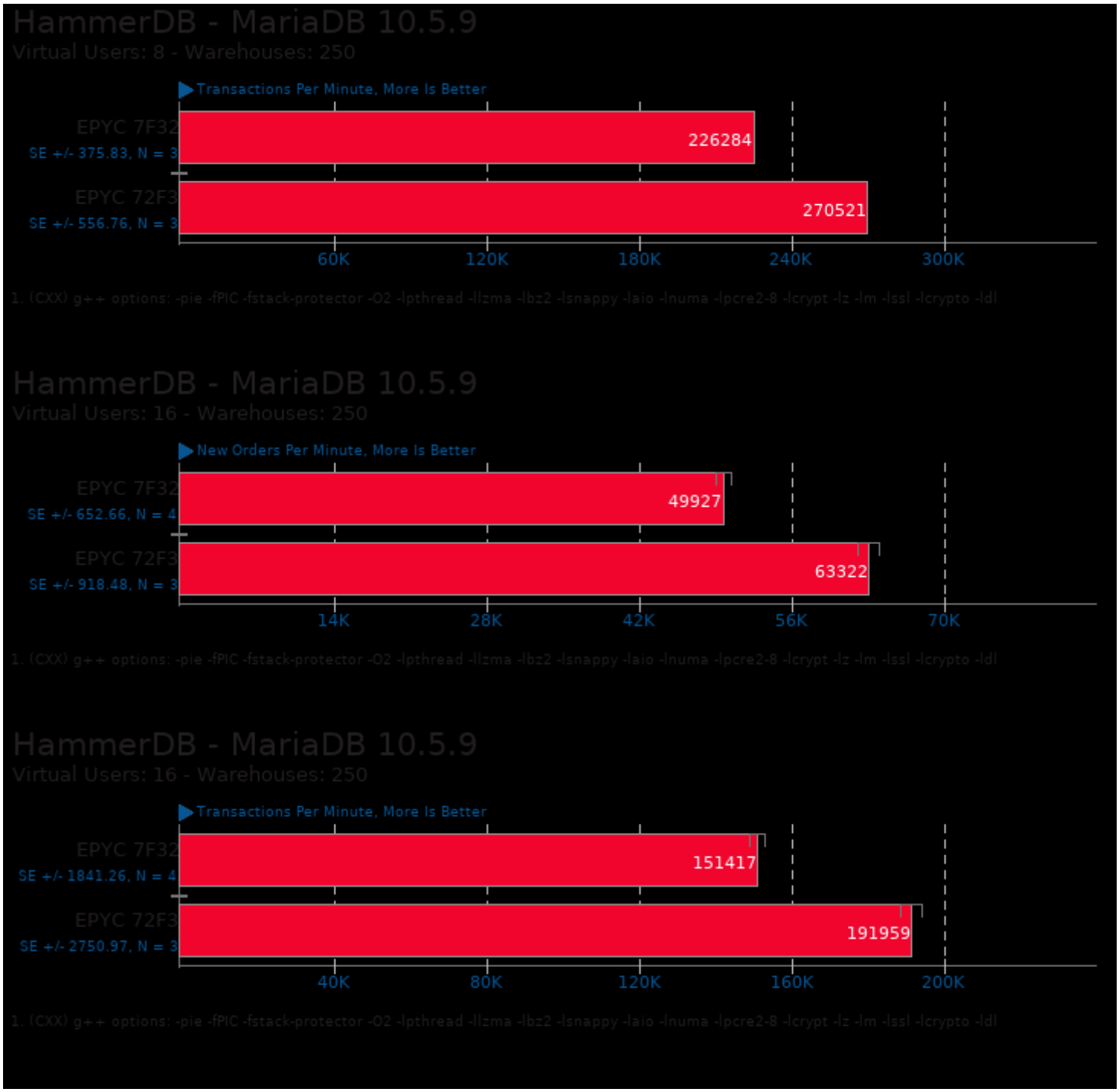
1. (CC) gcc options: -O3 -rdynamic

HammerDB - MariaDB 10.5.9

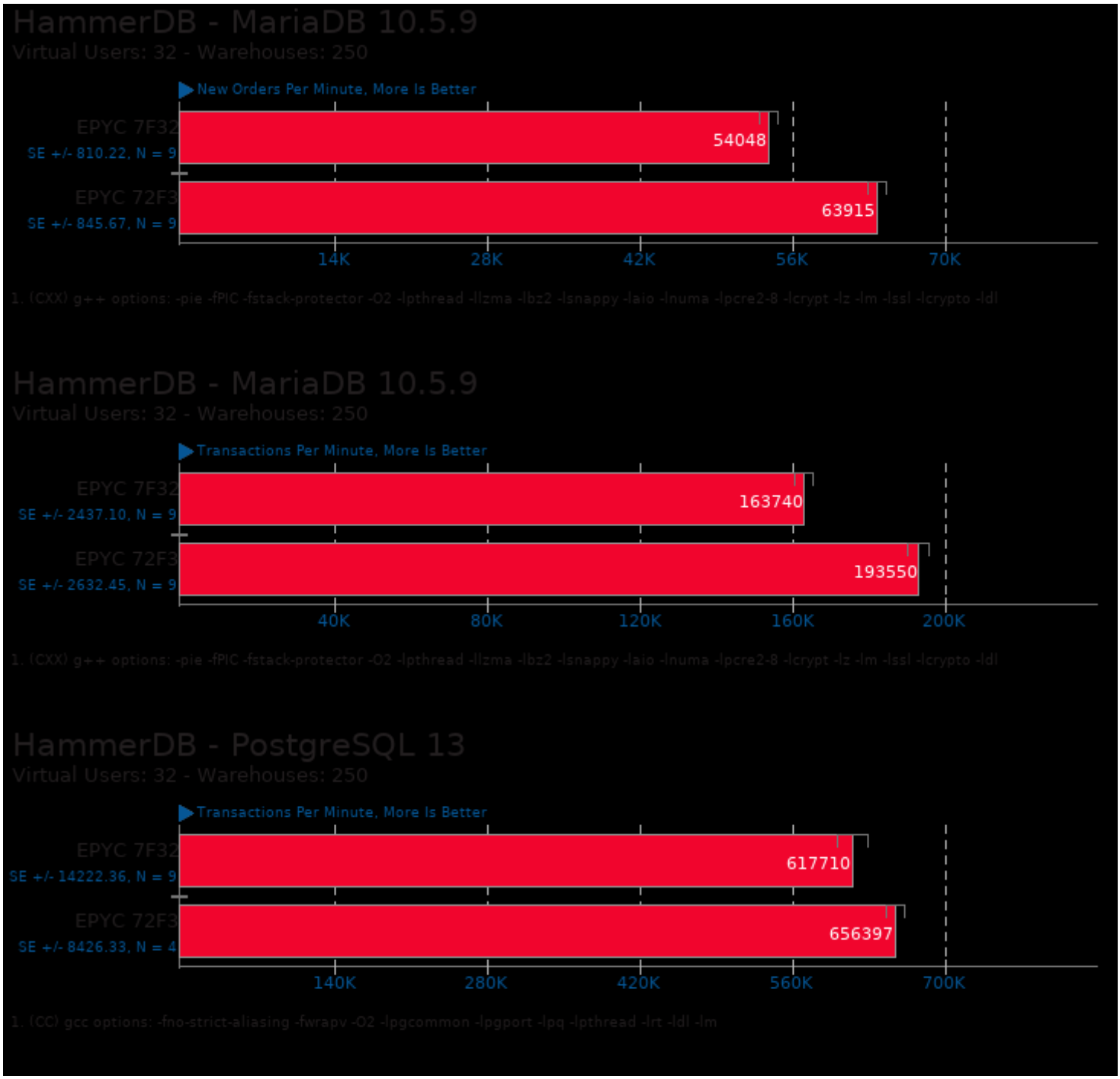
Virtual Users: 8 - Warehouses: 250



1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -lsnappy -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl


HammerDB - MariaDB 10.5.9
Virtual Users: 8 - Warehouses: 250
Transactions Per Minute, More Is Better
EPYC 7F32
SE +/- 375.83, N = 3
226284
EPYC 72F3
SE +/- 556.76, N = 3
270521
60K
120K
180K
240K
300K
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -lsnappy -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl
HammerDB - MariaDB 10.5.9
Virtual Users: 16 - Warehouses: 250
New Orders Per Minute, More Is Better
EPYC 7F32
SE +/- 652.66, N = 4
49927
EPYC 72F3
SE +/- 918.48, N = 3
63322
14K
28K
42K
56K
70K
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -lsnappy -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl
HammerDB - MariaDB 10.5.9
Virtual Users: 16 - Warehouses: 250
Transactions Per Minute, More Is Better
EPYC 7F32
SE +/- 1841.26, N = 4
151417
EPYC 72F3
SE +/- 2750.97, N = 3
191959
40K
80K
120K
160K
200K
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -lsnappy -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl

AMD EPYC 72F3 Performance Benchmarks

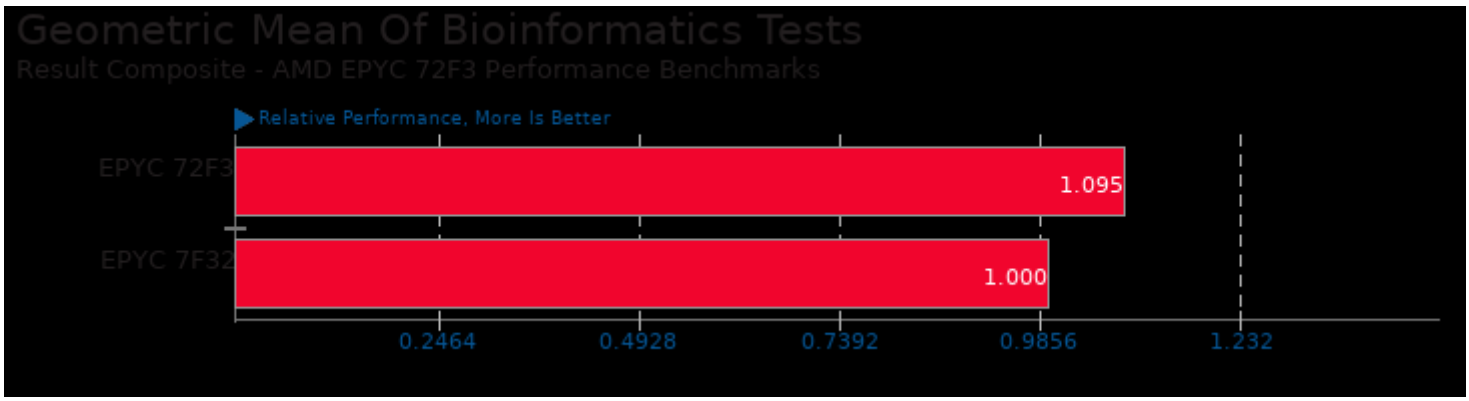


AMD EPYC 72F3 Performance Benchmarks

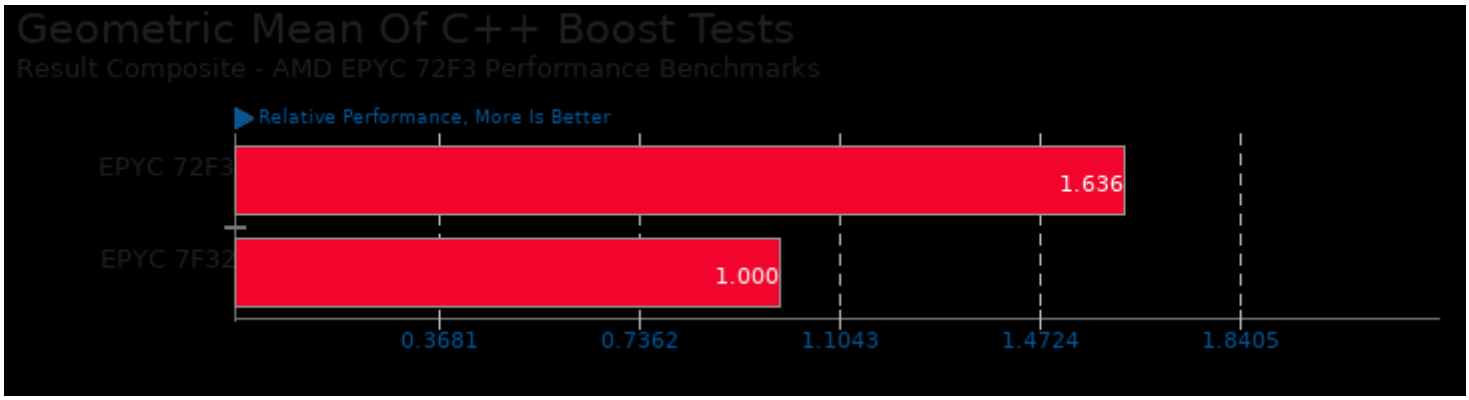
These geometric means are based upon test groupings / test suites for this result file.

Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/encode-wavpack and pts/encode-opus

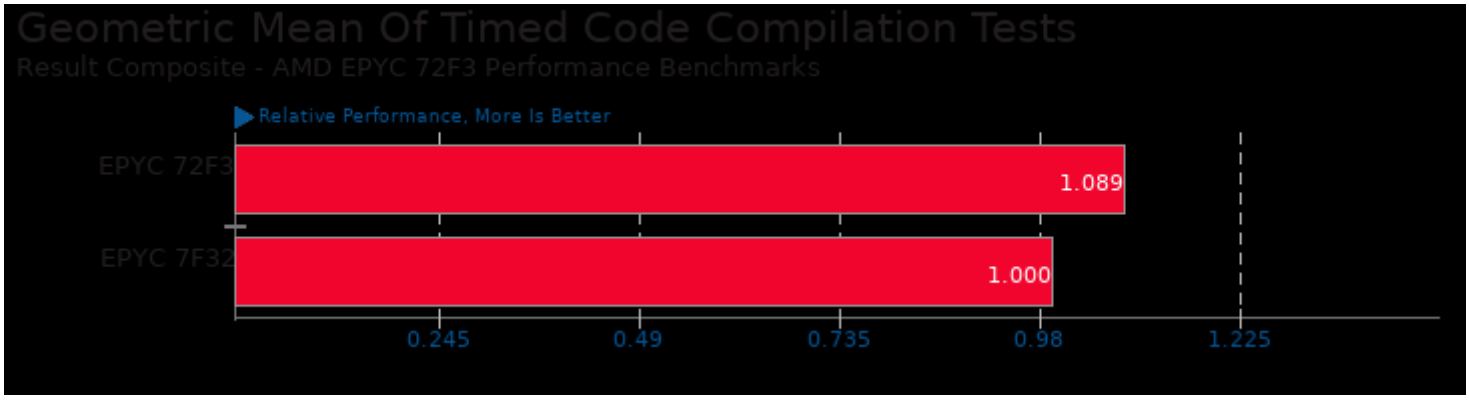
Geometric mean based upon tests: pts/aom-av1, pts/svt-av1 and pts/avifenc



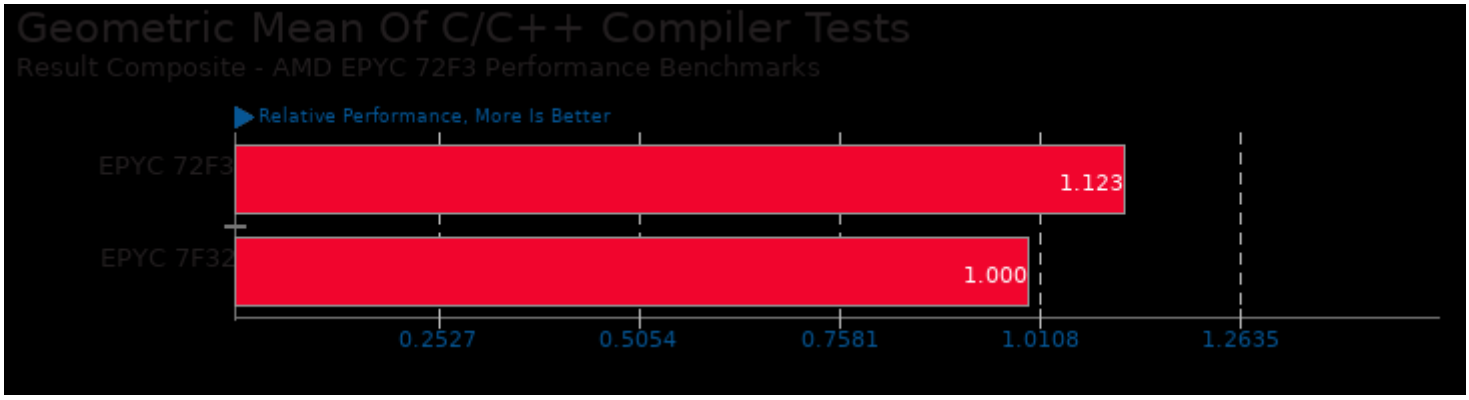
Geometric mean based upon tests: pts/himeno and pts/hmmer



Geometric mean based upon tests: pts/openfoam and pts/caffe



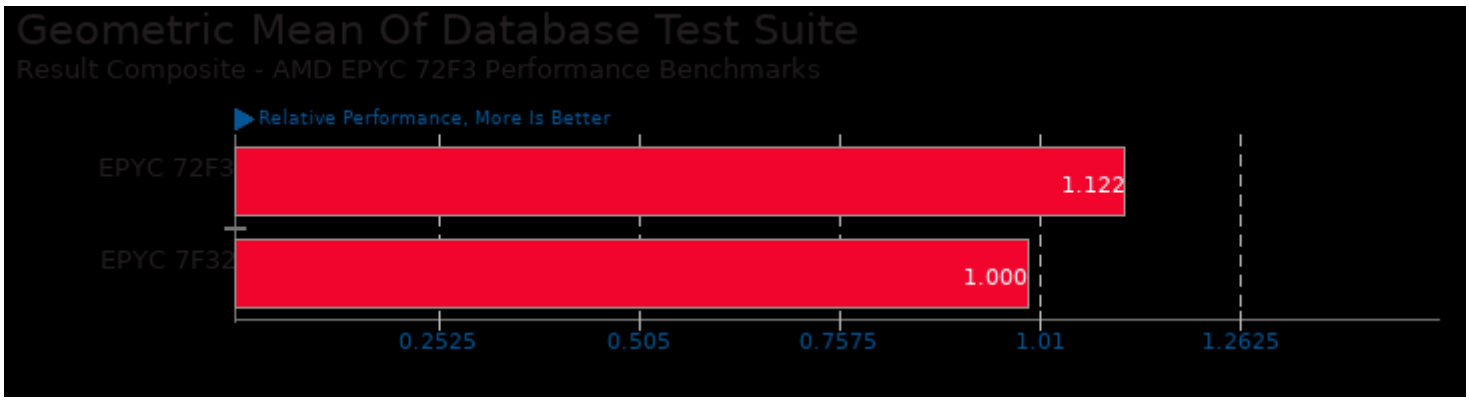
Geometric mean based upon tests: pts/build-linux-kernel, pts/build-godot, pts/build-erlang, pts/build-wasmer and pts/build-nodejs



Geometric mean based upon tests: pts/himeno, pts/hmmer, pts/encode-mp3, pts/encode-flac, pts/pgbench, pts/x265, pts/lammps, pts/aom-av1, pts/svt-av1, pts/svt-vp9 and pts/keydb

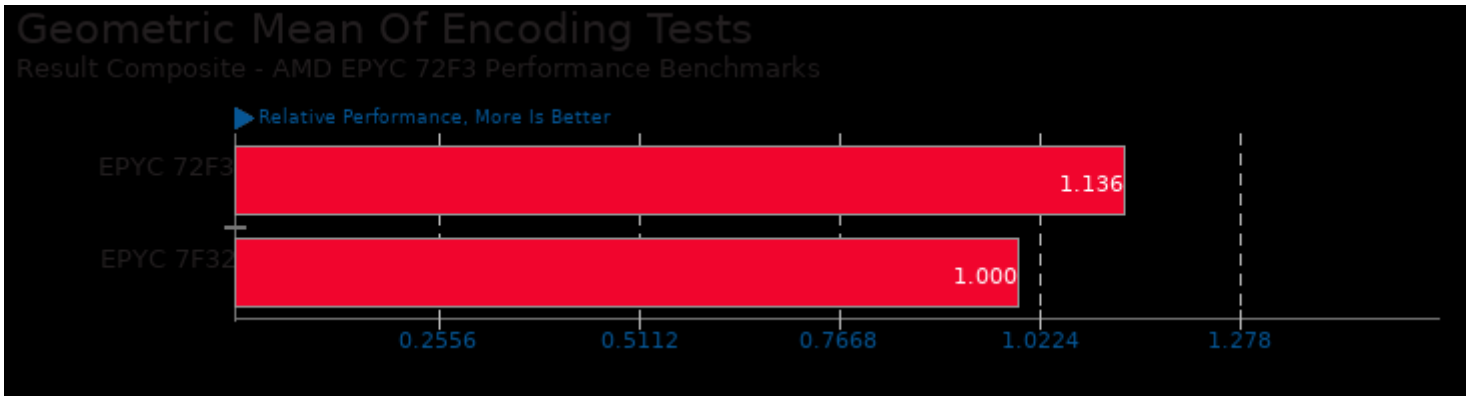
Geometric mean based upon tests: pts/build-linux-kernel, pts/cloverleaf, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/x265, pts/encode-flac, pts/encode-mp3, pts/himeno, pts/hmmer, pts/lammps, pts/namd, pts/numpy, pts/pgbench, pts/phpbench, pts/plaidml, pts/botan and pts/tjbench

Geometric mean based upon tests: pts/botan, pts/securemark and pts/xmrig

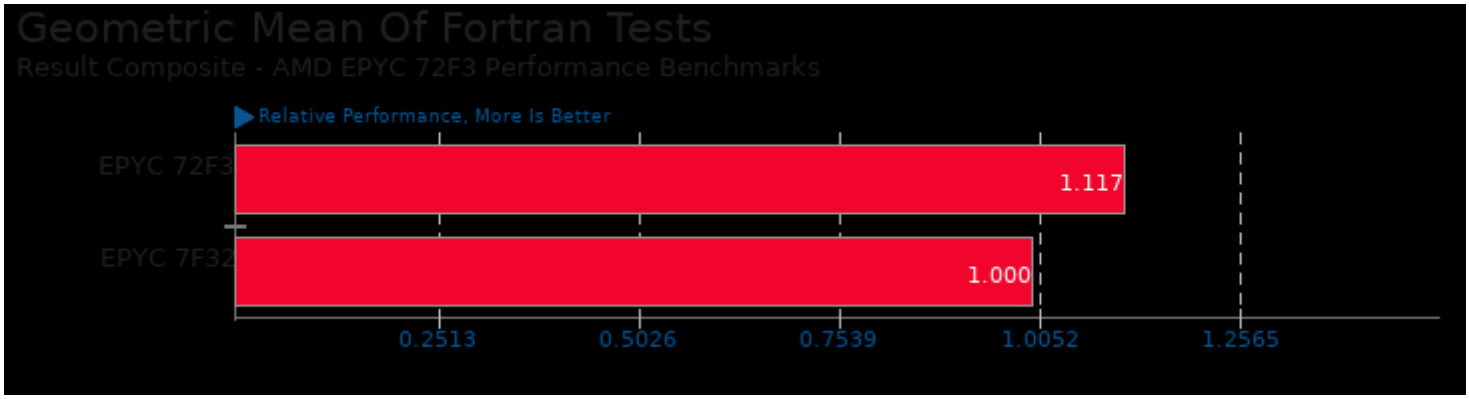


Geometric mean based upon tests: pts/keydb, pts/pgbench and pts/influxdb

AMD EPYC 72F3 Performance Benchmarks

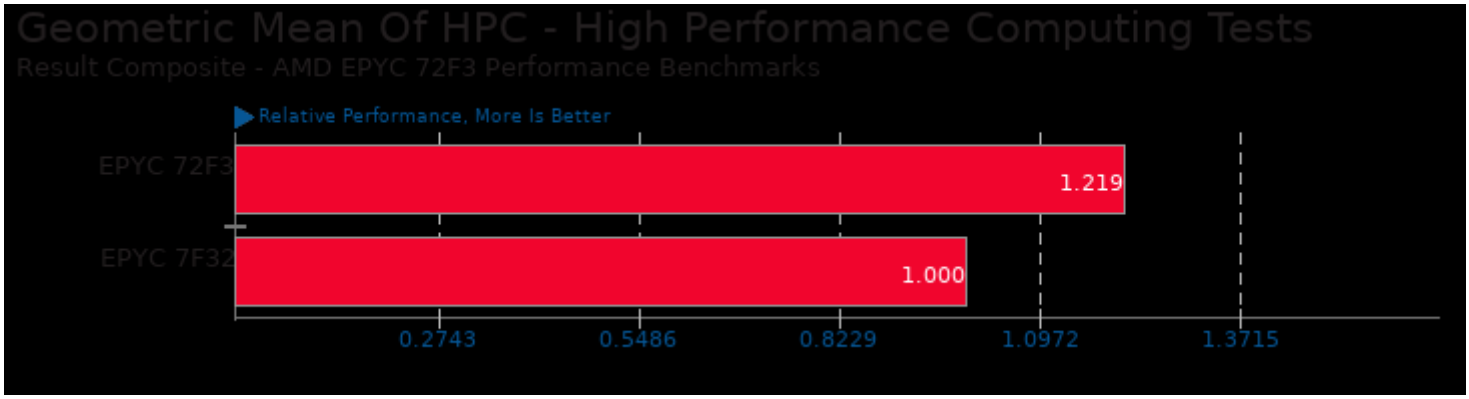


Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/encode-wavpack, pts/encode-opus, pts/svt-vp9, pts/svt-hevc, pts/x265, pts/aom-av1, pts/svt-av1 and pts/avifenc



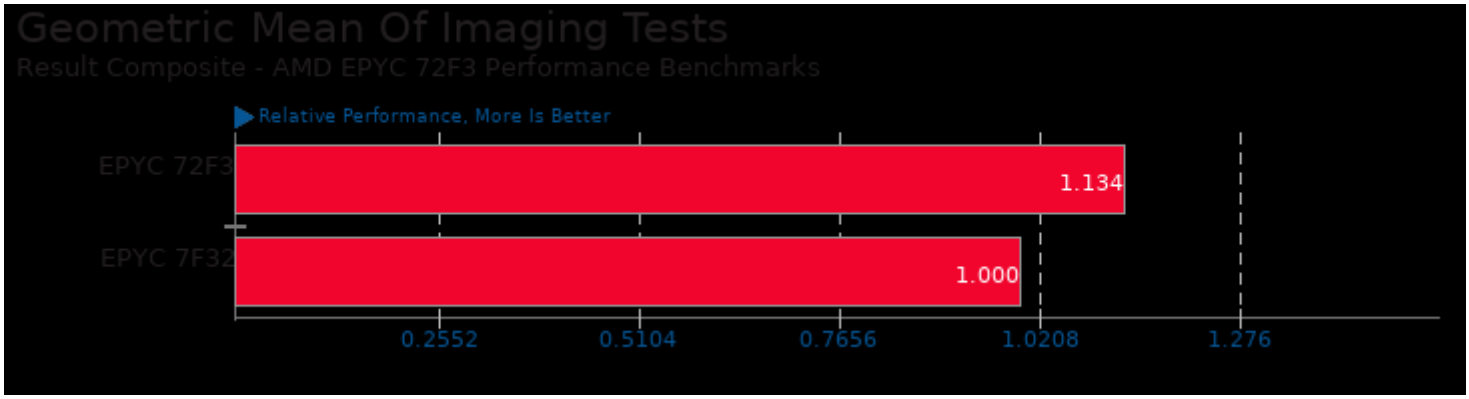
Geometric mean based upon tests: pts/cloverleaf and pts/lammps

Geometric mean based upon tests: pts/astcenc, pts/toktx, pts/build-godot and pts/openvkl

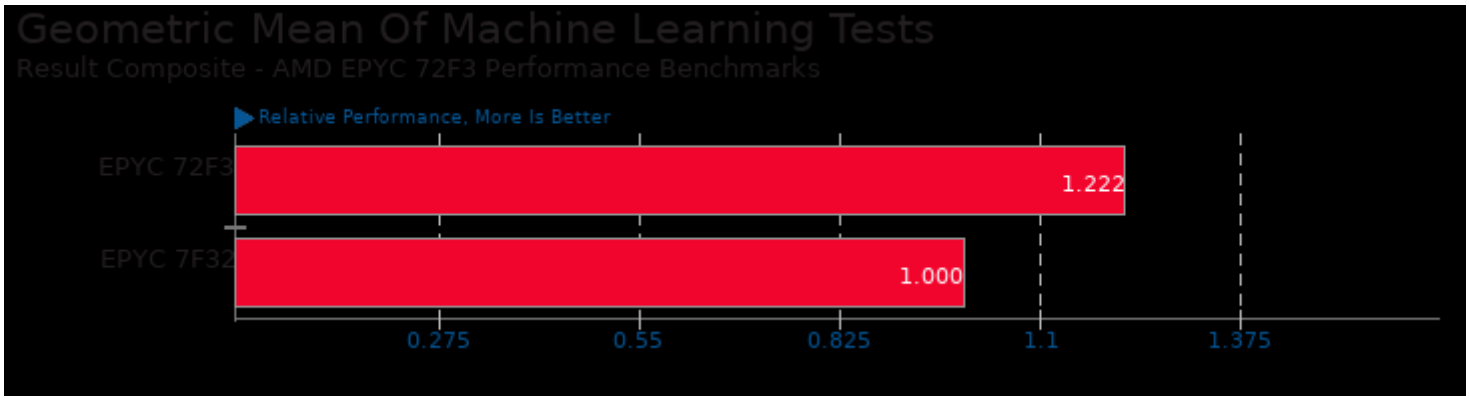


AMD EPYC 72F3 Performance Benchmarks

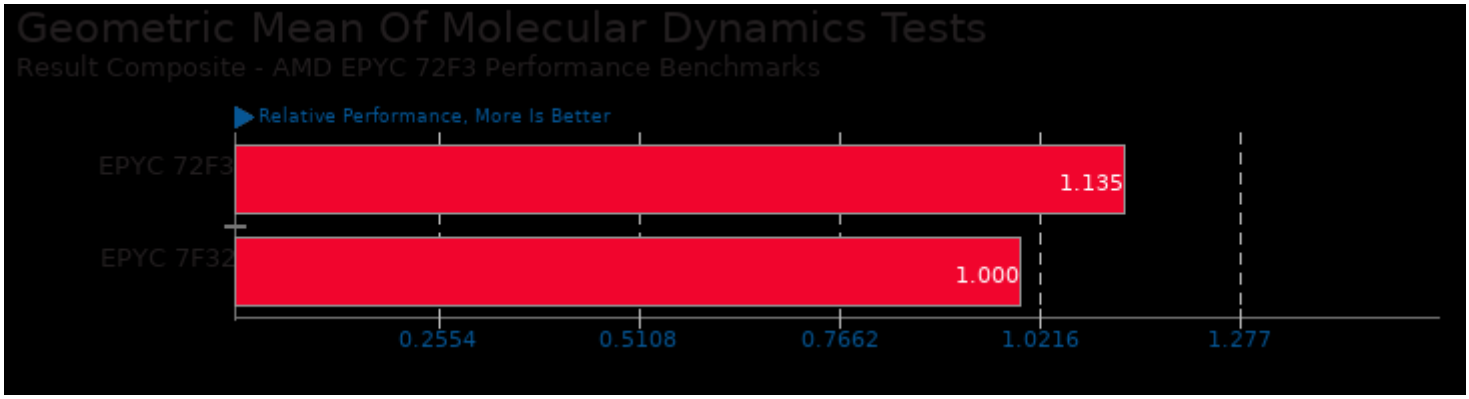
Geometric mean based upon tests: pts/askap, pts/mt-dgemm, pts/namd, pts/cp2k, pts/cloverleaf, pts/lammps, pts/openfoam, pts/himeno, pts/hmmer, pts/tnn, pts/caffe, pts/numpy, pts/deepspeech, pts/rnnoise, pts/tensorflow-lite and pts/plaidml



Geometric mean based upon tests: pts/tjbench and pts/avifenc

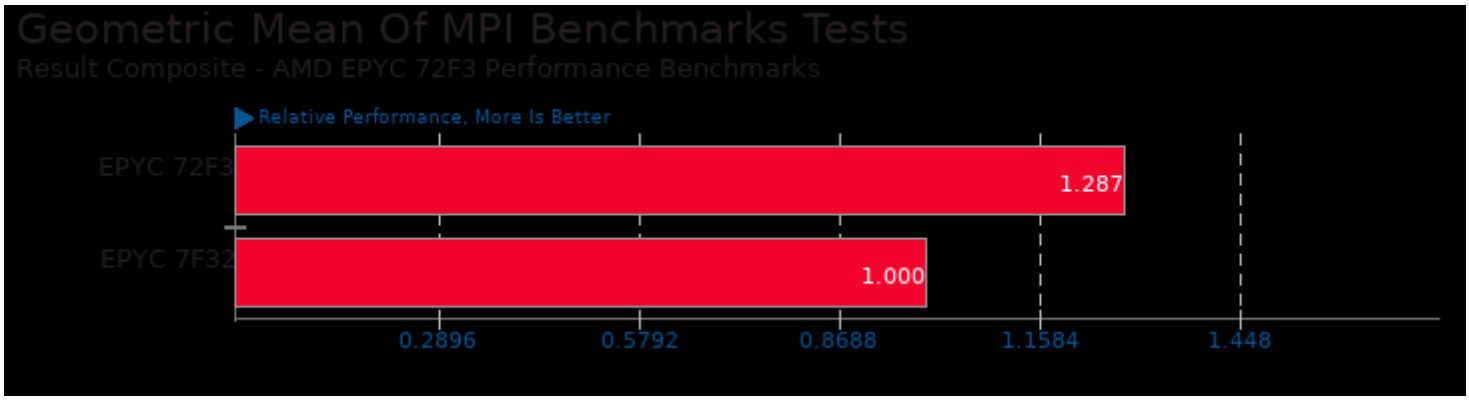


Geometric mean based upon tests: pts/tnn, pts/caffe, pts/numpy, pts/deepspeech, pts/rnnoise, pts/tensorflow-lite and pts/plaidml

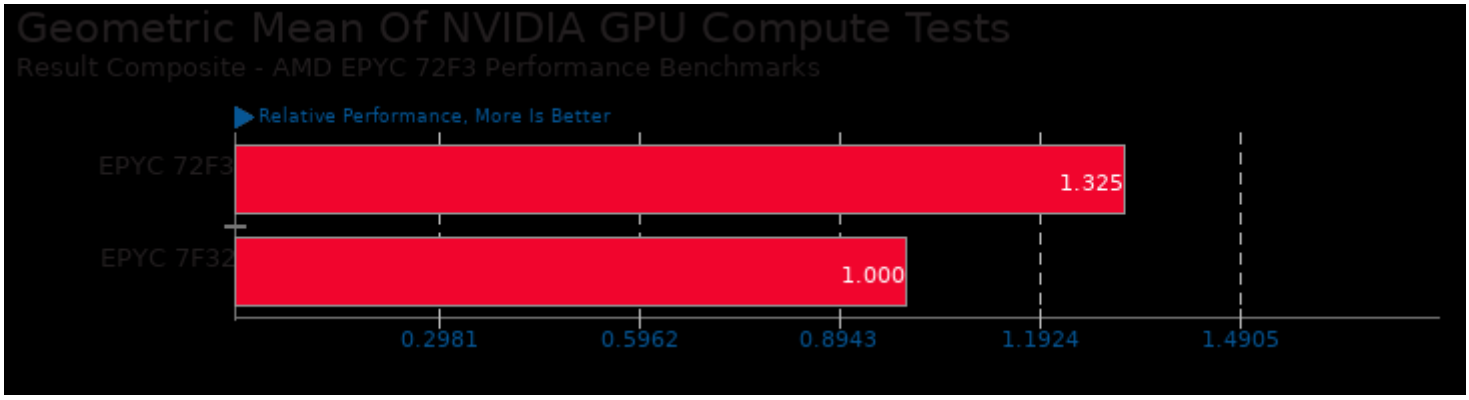


Geometric mean based upon tests: pts/namd, pts/cp2k, pts/cloverleaf, pts/lammps and pts/openfoam

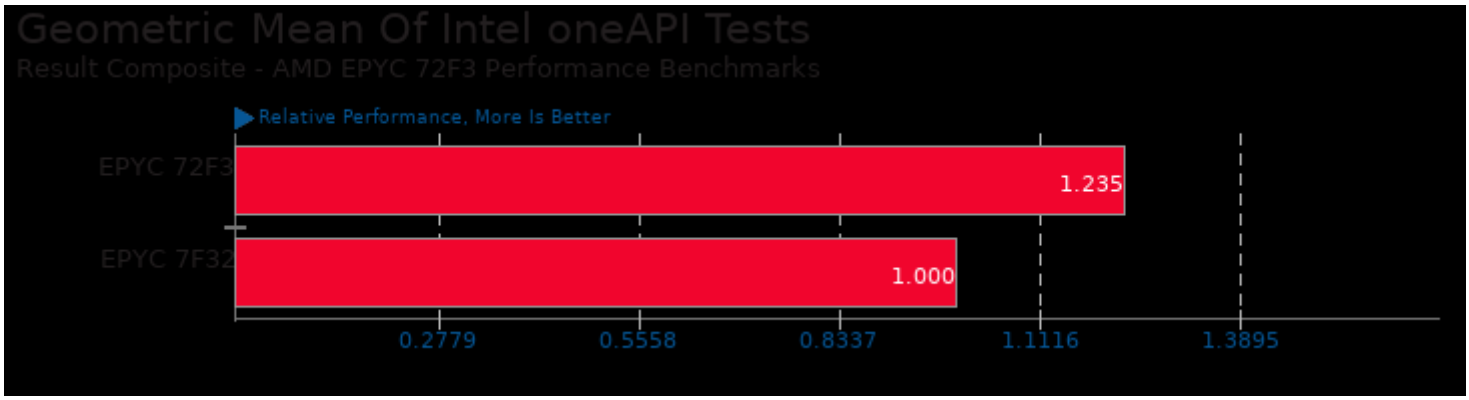
AMD EPYC 72F3 Performance Benchmarks



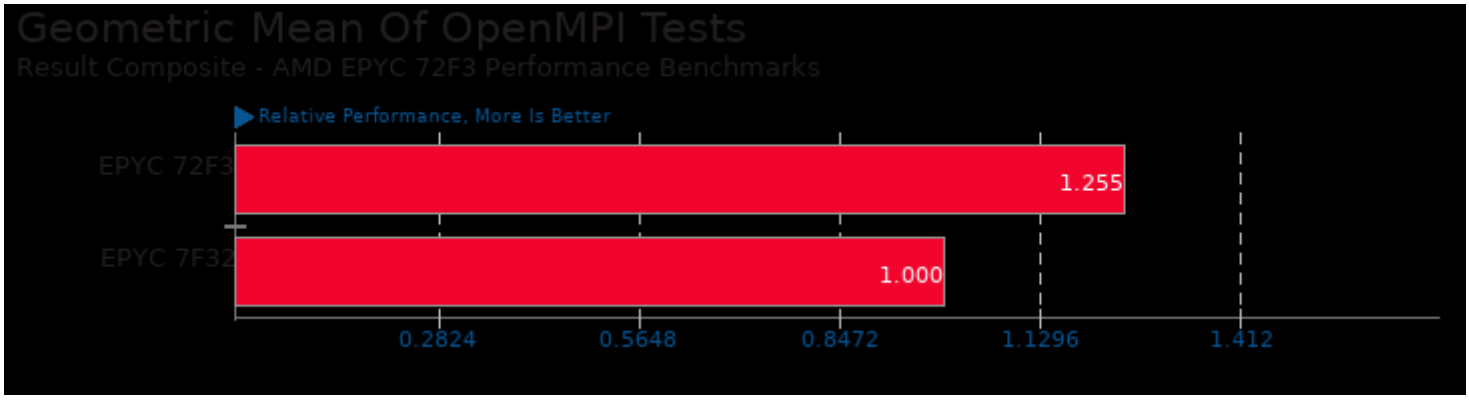
Geometric mean based upon tests: pts/askap and pts/lammps



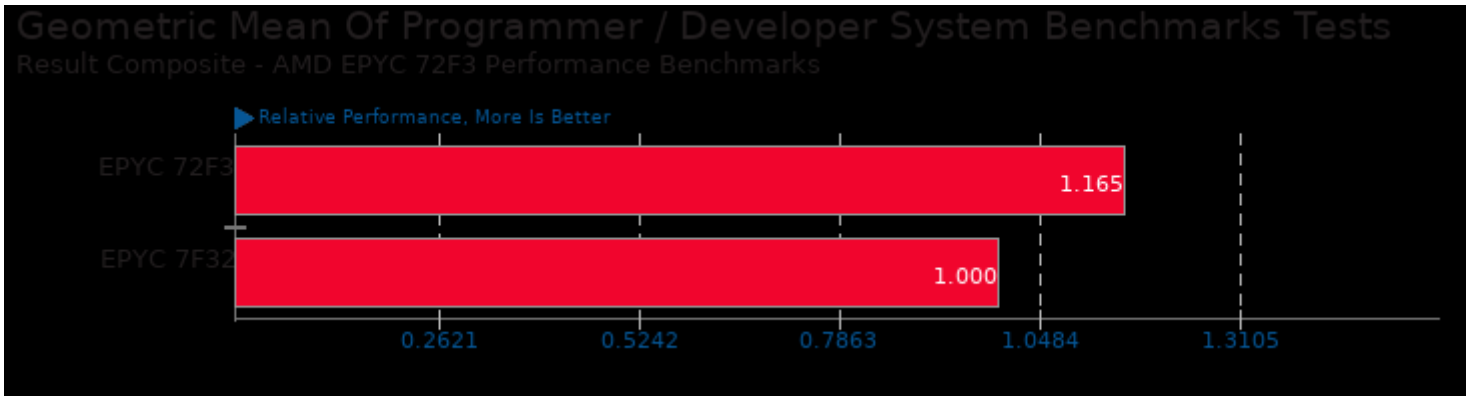
Geometric mean based upon tests: pts/luxcorerender, pts/plaidml and pts/caffe



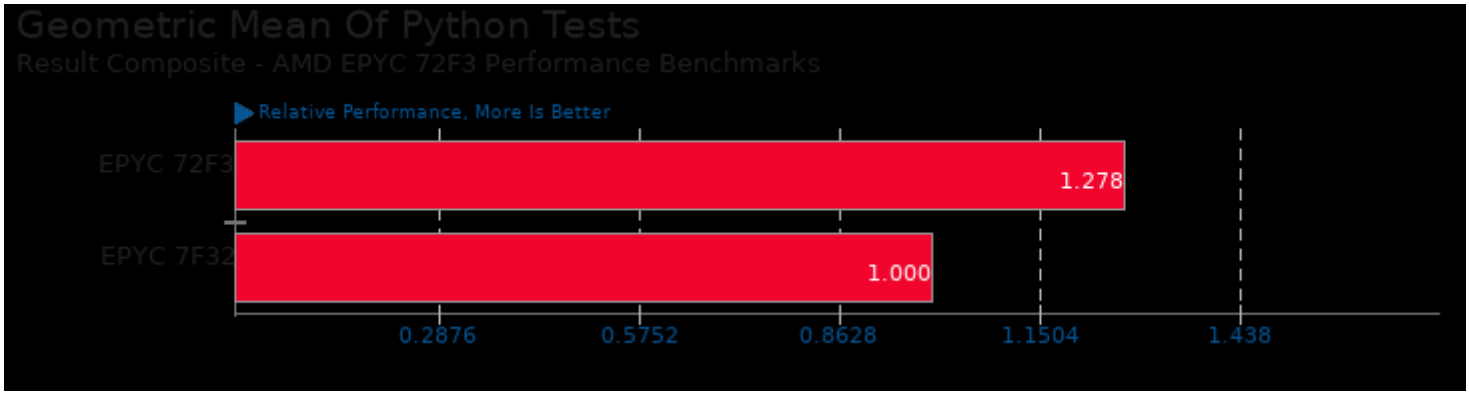
Geometric mean based upon tests: pts/embree, pts/ospray and pts/openvkl



Geometric mean based upon tests: pts/cloverleaf, pts/cp2k, pts/openfoam, pts/lammps and pts/askap

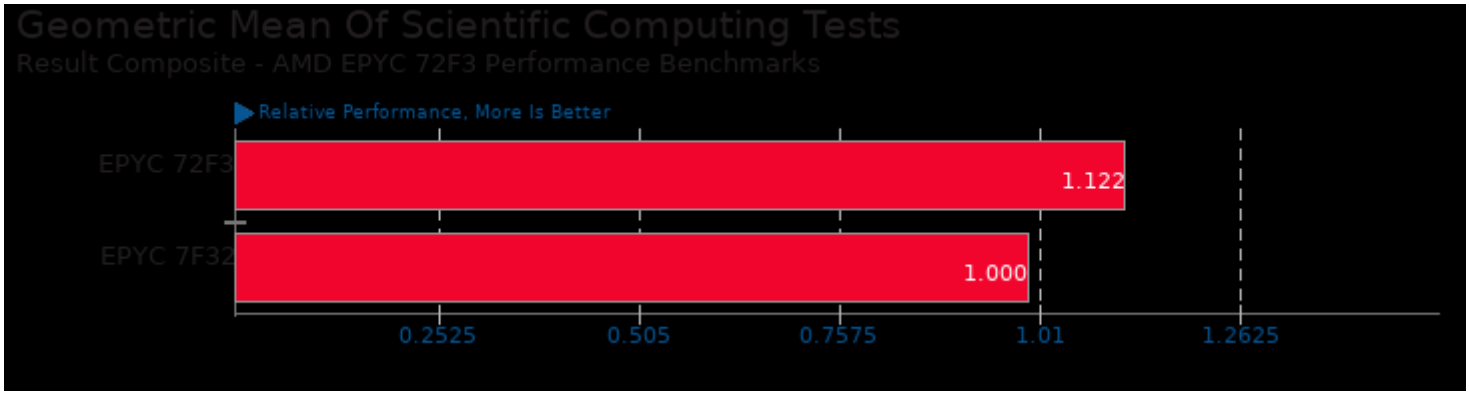


Geometric mean based upon tests: pts/simdjson, pts/pybench, pts/build-linux-kernel, pts/build-godot, pts/build-erlang, pts/build-wasmer, pts/build-nodejs and pts/mt-dgemm



Geometric mean based upon tests: pts/pybench and pts/numpy

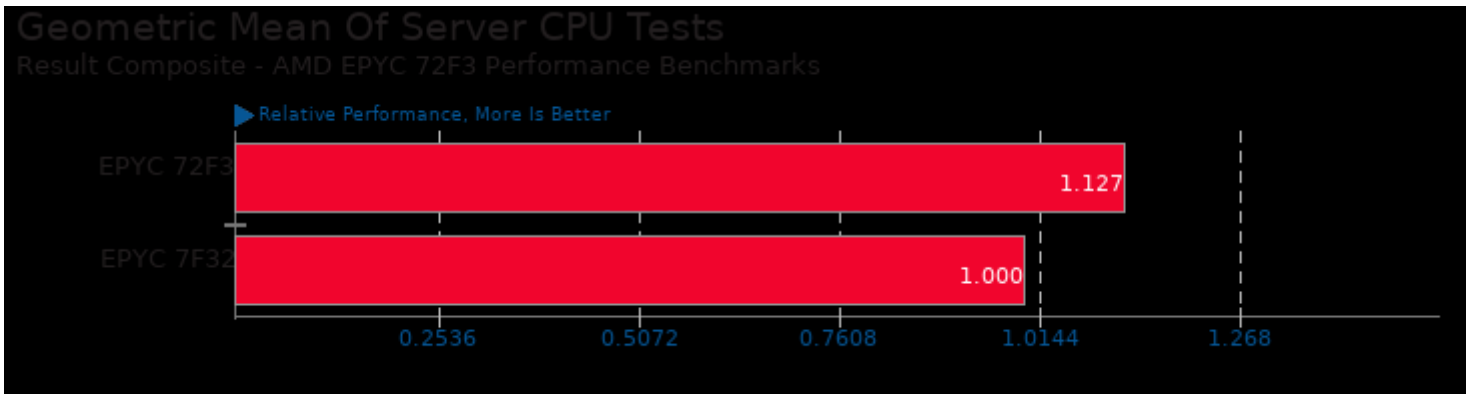
Geometric mean based upon tests: pts/ospray and pts/luxcorerender



Geometric mean based upon tests: pts/mt-dgemm, pts/namd, pts/cp2k, pts/cloverleaf, pts/lammps, pts/openfoam,

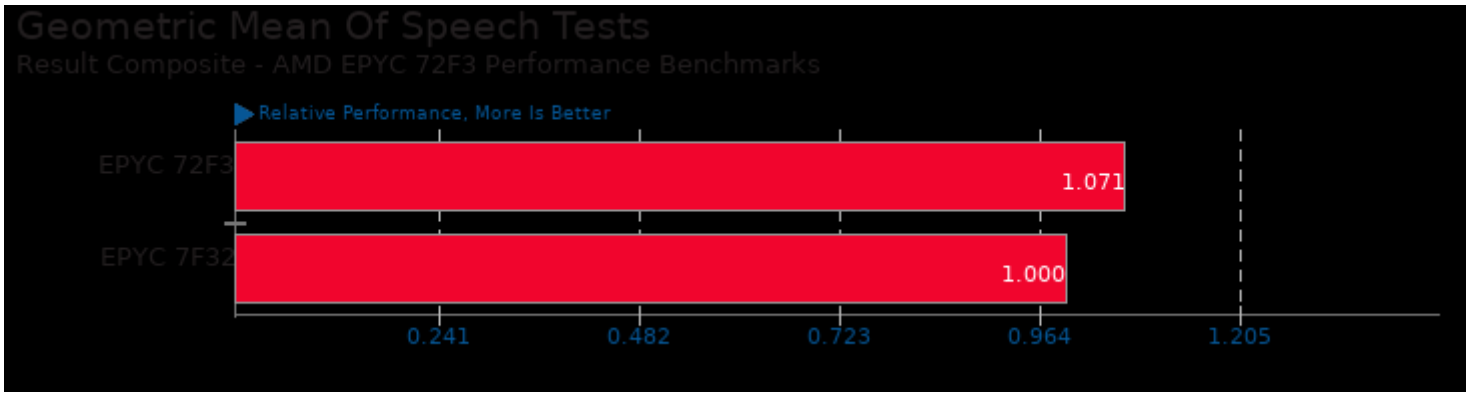
pts/himeno and pts/hmmer

Geometric mean based upon tests: pts/pgbench, pts/keydb, pts/phpbench, pts/simdjson and pts/influxdb

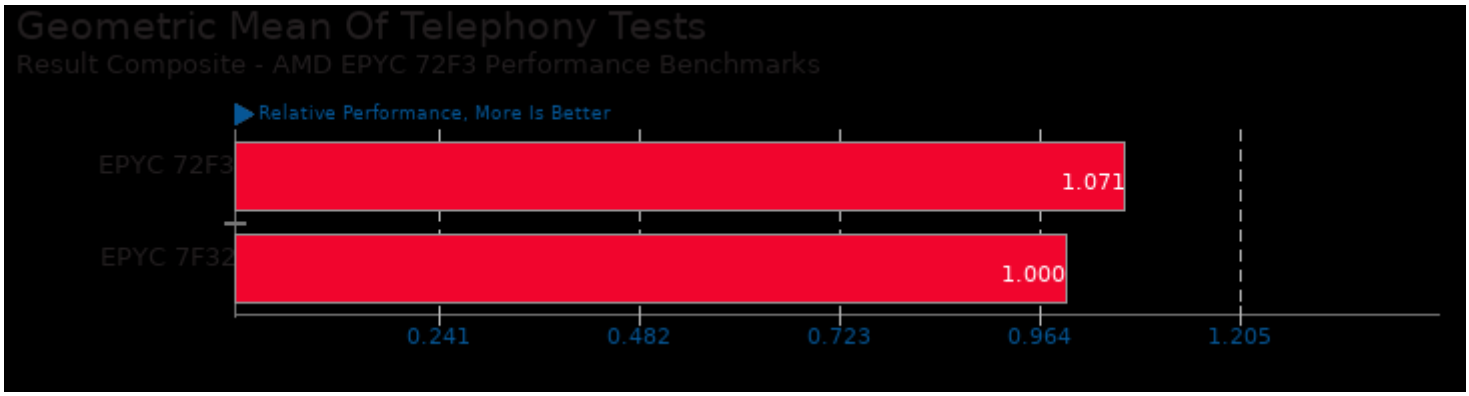


Geometric mean based upon tests: pts/cp2k, pts/namd, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/x265, pts/himeno, pts/build-linux-kernel, pts/tjbench, pts/pybench, pts/numpy and pts/phpbench

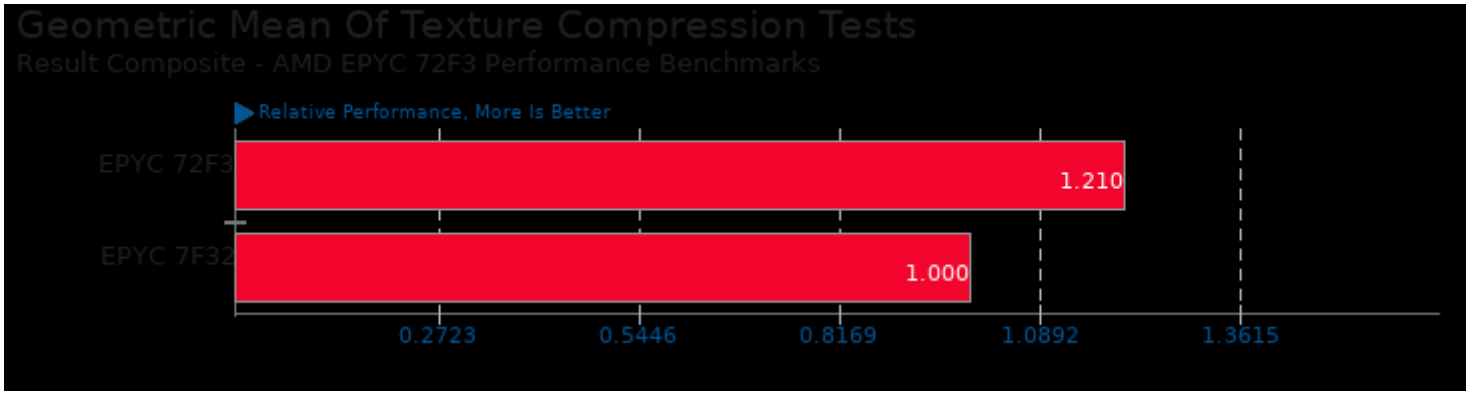
Geometric mean based upon tests: pts/botan, pts/numpy, pts/deepspeech, pts/encode-flac, pts/encode-mp3, pts/tjbench, pts/pybench and pts/phpbench



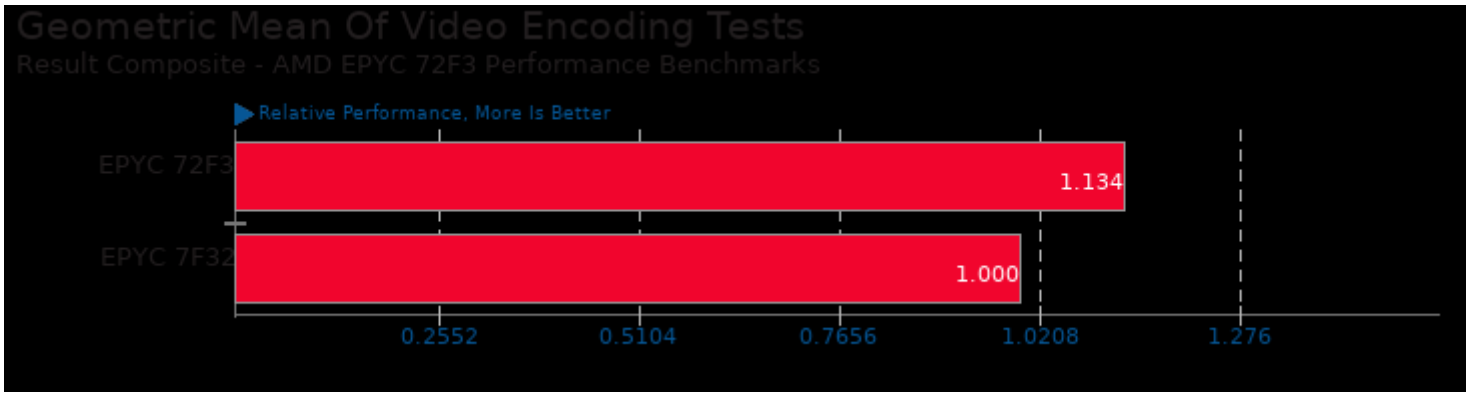
Geometric mean based upon tests: pts/deepspeech and pts/rnnoise



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

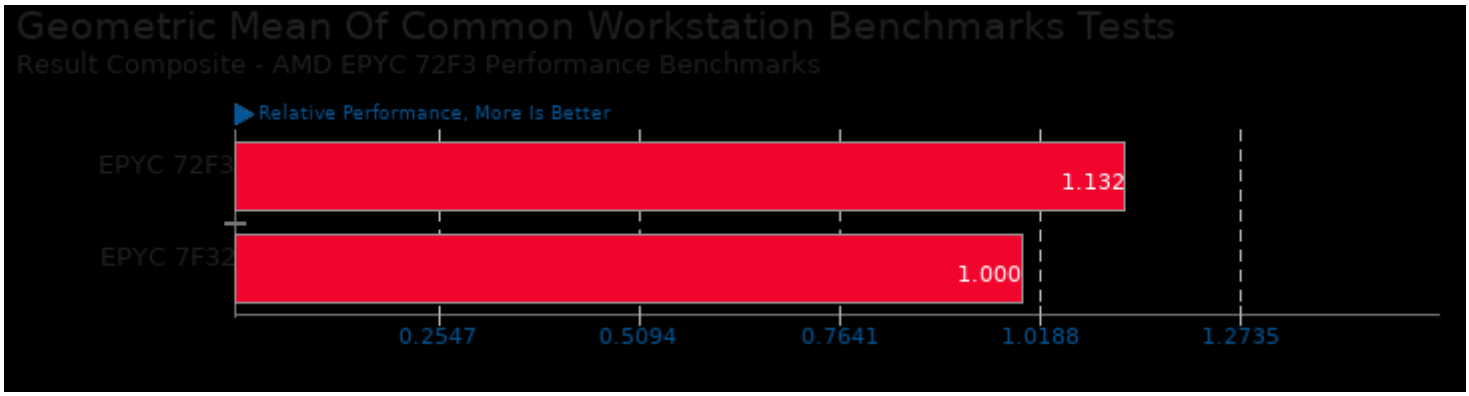


Geometric mean based upon tests: pts/astcenc and pts/toktx



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x265, pts/aom-av1, pts/svt-av1 and pts/avifenc

AMD EPYC 72F3 Performance Benchmarks



Geometric mean based upon tests: pts/himeno and pts/x265

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 07:16.