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Tests for a future article. AMD EPYC 74F3 24-Core testing with a AMD DAYTONA_X (RYM1001D BIOS) and ASPEED on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

EPYC 74F3 Pre 2 had the most wins, coming in first place for 26% of the tests.

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

Xmrig (Variant: Monero - Hash Count: 1M) at 5.346x
Stockfish (Total Time) at 4.04x
Embree (Binary: Pathtracer ISPC - Model: Crown) at 3.587x
Embree (Binary: Pathtracer - Model: Crown) at 3.581x
Xcompact3d Incompact3d (Input: input.i3d 193 Cells Per Direction) at 3.275x
SVT-AV1 (Encoder Mode: Preset 8 - Input: Bosphorus 4K) at 3.12x
Helsing (Digit Range: 14 digit) at 2.946x
LuxCoreRender (Scene: Orange Juice - Acceleration: CPU) at 2.931x
Xcompact3d Incompact3d (Input: input.i3d 129 Cells Per Direction) at 2.912x
Xmrig (Variant: Wownero - Hash Count: 1M) at 2.859x.

Test Systems:

EPYC 7453 2P Pre

EPYC 7453 2P

Processor: 2 x AMD EPYC 7453 28-Core @ 2.75GHz (56 Cores / 112 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 16 x 32 GB DDR4-3200MT/s 36ASF4G72PZ-3G2E2, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.04, Kernel: 5.11.6-051106-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server, OpenGL: 4.5 Mesa 20.2.6 (LLVM 11.0.0 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
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: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

EPYC 7453

EPYC 7453 Pre

Processor: AMD EPYC 7453 28-Core @ 2.75GHz (28 Cores / 56 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 8 x 32 GB DDR4-3200MT/s 36ASF4G72PZ-3G2E2, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.04, Kernel: 5.11.6-051106-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server, OpenGL: 4.5 Mesa 20.2.6 (LLVM 11.0.0 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
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: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

EPYC 7763 Pre

EPYC 7763

Processor: AMD EPYC 7763 64-Core @ 2.45GHz (64 Cores / 128 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 8 x 32 GB DDR4-3200MT/s 36ASF4G72PZ-3G2E2, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.04, Kernel: 5.11.6-051106-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server, OpenGL: 4.5 Mesa 20.2.6 (LLVM 11.0.0 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
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: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

EPYC 7763 2P Pre

EPYC 7763 2P

EPYC 7763 2P Post

Processor: 2 x AMD EPYC 7763 64-Core @ 2.45GHz (128 Cores / 256 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 16 x 32 GB DDR4-3200MT/s 36ASF4G72PZ-3G2E2, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.04, Kernel: 5.11.6-051106-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server, OpenGL: 4.5 Mesa 20.2.6 (LLVM 11.0.0 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
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: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

EPYC 74F3 Pre

Processor: AMD EPYC 74F3 24-Core @ 3.20GHz (24 Cores / 48 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 8 x 32 GB DDR4-3200MT/s 36ASF4G72PZ-3G2E2, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.04, Kernel: 5.11.6-051106-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server, OpenGL: 4.5 Mesa 20.2.6 (LLVM 11.0.0 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
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: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

EPYC 74F3 Pre 2

EPYC 74F3

Processor: AMD EPYC 74F3 24-Core @ 3.20GHz (24 Cores / 48 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 8 x 32 GB DDR4-3200MT/s 36ASF4G72PZ-3G2E2, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: ASPEED, Monitor: VE228, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.04, Kernel: 5.11.6-051106-generic (x86_64), Display Server: X Server, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
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: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	EPYC 7453 2P Pre	EPYC 7453 2P	EPYC 7453	EPYC 7453 Pre	EPYC 7763 Pre	EPYC 7763	EPYC 7763 2P Pre	EPYC 7763 2P	EPYC 7763 2P Post	EPYC 74F3 Pre	EPYC 74F3 Pre 2	EPYC 74F3
WRF - conus 2.5km (sec)		11573			16671	16650	**8474**	8477			**20759**	
Normalized		73.22%			50.83%	50.89%	100%	99.97%			40.82%	
Xcompact3d Incompact3d - X.b.i.i (sec)		380.065 033	**732.748 474**	731.673 889	613.658 264	612.730 225	304.666 687	**304.135 803**	304.475 006		698.182 861	698.642 395
Normalized		80.02%	41.51%	41.57%	49.56%	49.64%	99.83%	100%	99.89%		43.56%	43.53%
Timed LLVM Compilation - Unix Makefiles		241.29	**360.349**	342.097	234.118	235.493	205.887	204.96	**203.762**		314.94	321.71
Normalized		84.45%	56.55%	59.56%	87.03%	86.53%	98.97%	99.42%	100%		64.7%	63.34%
Timed LLVM Compilation - Ninja (sec)		174.023	293.483	**293.551**	164.001	163.417	110.525	110.834	**110.121**		268.836	269.583
Normalized		63.28%	37.52%	37.51%	67.15%	67.39%	99.63%	99.36%	100%		40.96%	40.85%
libgav1 - C.1.1.b (FPS)	36	**33.24**	59.85	57.33	57.28	55.77	44.13	46.78	45.6		**67.01**	65.07
Normalized	53.72%	49.6%	89.32%	85.55%	85.48%	83.23%	65.86%	69.81%	68.05%		100%	97.1%

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AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	4.23	**4.16**	4.61	4.6	4.93	4.96	4.24	4.29	4.27	**5.2**	5.19
Normalized	81.35%	80%	88.65%	88.46%	94.81%	95.38%	81.54%	82.5%	82.12%	100%	99.81%
Helsing - 14 digit (sec)	100.271	101.308	204.4	204.353	118.127	118.054	86.965	79.838	**71.947**	**211.968**	211.965
Normalized	71.75%	71.02%	35.2%	35.21%	60.91%	60.94%	82.73%	90.12%	100%	33.94%	33.94%
Timed Node.js Compilation - Time To Compile (sec)	121.335	120.571	**193.875**	193.248	112.256	112.357	80.978	**80.382**	80.865	174.513	174.504
Normalized	66.25%	66.67%	41.46%	41.6%	71.61%	71.54%	99.26%	100%	99.4%	46.06%	46.06%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.2	0.2	**0.19**	**0.19**	0.2	0.2	0.2	0.2	0.2	**0.21**	**0.21**
Normalized	95.24%	95.24%	90.48%	90.48%	95.24%	95.24%	95.24%	95.24%	95.24%	100%	100%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	6.71	6.51	7.44	7.47	7	6.98	6.38	**6.31**	6.34	8.25	**8.35**
Normalized	80.36%	77.96%	89.1%	89.46%	83.83%	83.59%	76.41%	75.57%	75.93%	98.8%	100%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	7.89	**7.86**	8.98	8.91	9.72	9.91	8.99	8.5	8.87	9.82	**10.2**
Normalized	77.35%	77.06%	88.04%	87.35%	95.29%	97.16%	88.14%	83.33%	86.96%	96.27%	100%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)		**1.439**	1.475	1.449	3.932	**3.933**	3.834	3.858	3.889	1.717	1.7
Normalized		36.59%	37.5%	36.84%	99.97%	100%	97.48%	98.09%	98.88%	43.66%	43.22%
libgav1 - Chimera 1080p	83.55	95.39	156.3	149.13	137.74	134.6	116.82	**77**	112.18	**165.98**	162.62
Normalized	50.34%	57.47%	94.17%	89.85%	82.99%	81.09%	70.38%	46.39%	67.59%	100%	97.98%
libgav1 - Summer Nature	42.11	**40.4**	62.76	59.66	59.31	56.76	49.54	47.48	42.36	**66.61**	63.61
Normalized	63.22%	60.65%	94.22%	89.57%	89.04%	85.21%	74.37%	71.28%	63.59%	100%	95.5%
PJSIP - INVITE (Responses/sec)		4403	4297	**4265**	4971	4960	4905	4913	4869	**5145**	5134
Normalized		85.58%	83.52%	82.9%	96.62%	96.4%	95.34%	95.49%	94.64%	100%	99.79%

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PJSIP - OPTIONS, Stateful (Responses/sec)		7507	7529	7704	9181	9190	9042	9068	9003	9459	9442
Normalized		79.36%	79.6%	81.45%	97.06%	97.16%	95.59%	95.87%	95.18%	100%	99.82%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	12.59	12.71	7.53	7.62	13.79	13.77	20.35	20.71	21.37	7.3	7.29
Normalized	58.91%	59.48%	35.24%	35.66%	64.53%	64.44%	95.23%	96.91%	100%	34.16%	34.11%
LuxCoreRender - Danish Mood - CPU (M samples/sec)	5.82	5.78	3.93	3.82	7.39	7.49	9	8.28	8.09	3.69	3.72
Normalized	64.67%	64.22%	43.67%	42.44%	82.11%	83.22%	100%	92%	89.89%	41%	41.33%
LuxCoreRender - LuxCore Benchmark - CPU (M	6.18	6.24	4.12	4.15	8.01	8.01	7.97	9.26	8.28	4.03	4.03
Normalized	66.74%	67.39%	44.49%	44.82%	86.5%	86.5%	86.07%	100%	89.42%	43.52%	43.52%
LuxCoreRender - DLSC - CPU (M samples/sec)	8.68	8.22	4.95	4.93	9.17	9.16	13.03	13.17	12.85	4.74	4.71
Normalized	65.91%	62.41%	37.59%	37.43%	69.63%	69.55%	98.94%	100%	97.57%	35.99%	35.76%
Timed Godot Game Engine Compilation - Time To Compile (sec)	55.955	56.477	69.634	69.564	52.602	52.751	54.066	54.509	54.336	63.973	64.06
Normalized	94.01%	93.14%	75.54%	75.62%	100%	99.72%	97.29%	96.5%	96.81%	82.23%	82.11%
Chia Blockchain VDF - S.A.O (IPS)	105200	105600	103600	107500	103700	106400	109000	109700	112000	119600	117100
Normalized	87.96%	88.29%	86.62%	89.88%	86.71%	88.96%	91.14%	91.72%	93.65%	100%	97.91%
PJSIP - OPTIONS, Stateless (Responses/sec)		41727	55763	55628	55845	56246	56295	54166	55408	35674	35839
Normalized		74.12%	99.05%	98.82%	99.2%	99.91%	100%	96.22%	98.42%	63.37%	63.66%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	21.43	21.25	24.65	24.67	24.35	23.84	20.68	21.4	20.71	26.6	26.41
Normalized	80.56%	79.89%	92.67%	92.74%	91.54%	89.62%	77.74%	80.45%	77.86%	100%	99.29%

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AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	0.5	0.5	0.51	0.51	0.49	0.49	**0.48**	**0.48**	0.49	**0.58**	**0.58**
Normalized	86.21%	86.21%	87.93%	87.93%	84.48%	84.48%	82.76%	82.76%	84.48%	100%	100%
Xmrig - Monero - 1M (H/s)	20623	21040	**14381**	14404	47306	41339	**76876**	69764	69142	21080	21099
Normalized	26.83%	27.37%	18.71%	18.74%	61.54%	53.77%	100%	90.75%	89.94%	27.42%	27.45%
Xmrig - Wownero - 1M	24714	32386	16583	**16504**	**47190**	45598	46149	42198	42144	21337	21320
Normalized	52.37%	68.63%	35.14%	34.97%	100%	96.63%	97.79%	89.42%	89.31%	45.22%	45.18%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K	16.96	17.54	18.37	18.21	18.63	18.89	**16.27**	17.18	17.11	**19.97**	19.86
Normalized	84.93%	87.83%	91.99%	91.19%	93.29%	94.59%	81.47%	86.03%	85.68%	100%	99.45%
Chia Blockchain VDF - Square Plain C++ (IPS)	152600	151200	152500	151500	153000	152600	151400	150600	**150200**	175900	**176100**
Normalized	86.66%	85.86%	86.6%	86.03%	86.88%	86.66%	85.97%	85.52%	85.29%	99.89%	100%
Timed Linux Kernel Compilation - Time To Compile (sec)	29.13	28.99	**42.966**	42.918	28.27	28.336	**21.94**	22.515	22.068	40.96	41.066
Normalized	75.32%	75.68%	51.06%	51.12%	77.61%	77.43%	100%	97.45%	99.42%	53.56%	53.43%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	41.9392	40.5897	29.1094	29.2995	58.0957	58.513	**61.1845**	56.7188	57.6706	**28.0086**	28.2521
Normalized	68.55%	66.34%	47.58%	47.89%	94.95%	95.63%	100%	92.7%	94.26%	45.78%	46.18%
Embree - Pathtracer - Asian Dragon	42.0026	41.9926	32.8076	32.9423	**62.65**	62.5336	57.0864	57.4844	58.1538	**31.8604**	31.8688
Normalized	67.04%	67.03%	52.37%	52.58%	100%	99.81%	91.12%	91.75%	92.82%	50.85%	50.87%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)		19.978	**18.573**	19.918	54.254	55.819	55.011	57.76	**57.948**	20.177	21.844
Normalized		34.48%	32.05%	34.37%	93.63%	96.33%	94.93%	99.68%	100%	34.82%	37.7%
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)		**5.997**	6.365	6.344	8.072	**8.245**	7.997	8.175	8.046	7.372	7.198
Normalized		72.73%	77.2%	76.94%	97.9%	100%	96.99%	99.15%	97.59%	89.41%	87.3%
Stockfish - Total Time (Nodes/s)	148094 167	140851 143	785574 52	794024 07	158513 270	163750 574	280560 420	**295120 873**	278473 156	740711 27	**730425 46**
Normalized	50.18%	47.73%	26.62%	26.91%	53.71%	55.49%	95.07%	100%	94.36%	25.1%	24.75%
libgav1 - S.N.1 (FPS)	**89.92**	130.9	198.12	189.55	172.42	166.48	157.61	156.59	150.41	**211.49**	203.57
Normalized	42.52%	61.89%	93.68%	89.63%	81.53%	78.72%	74.52%	74.04%	71.12%	100%	96.26%

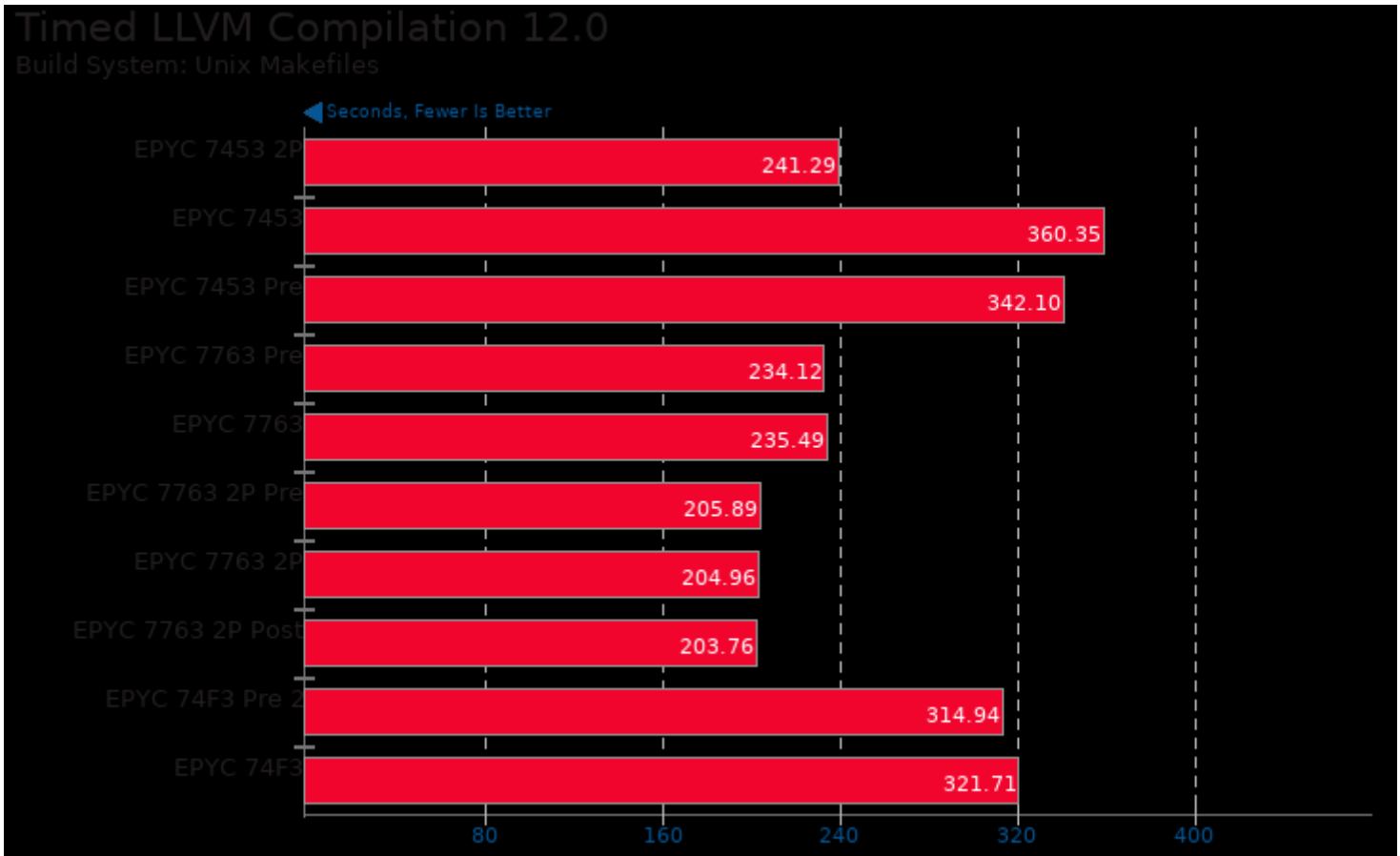
onerun-surplus

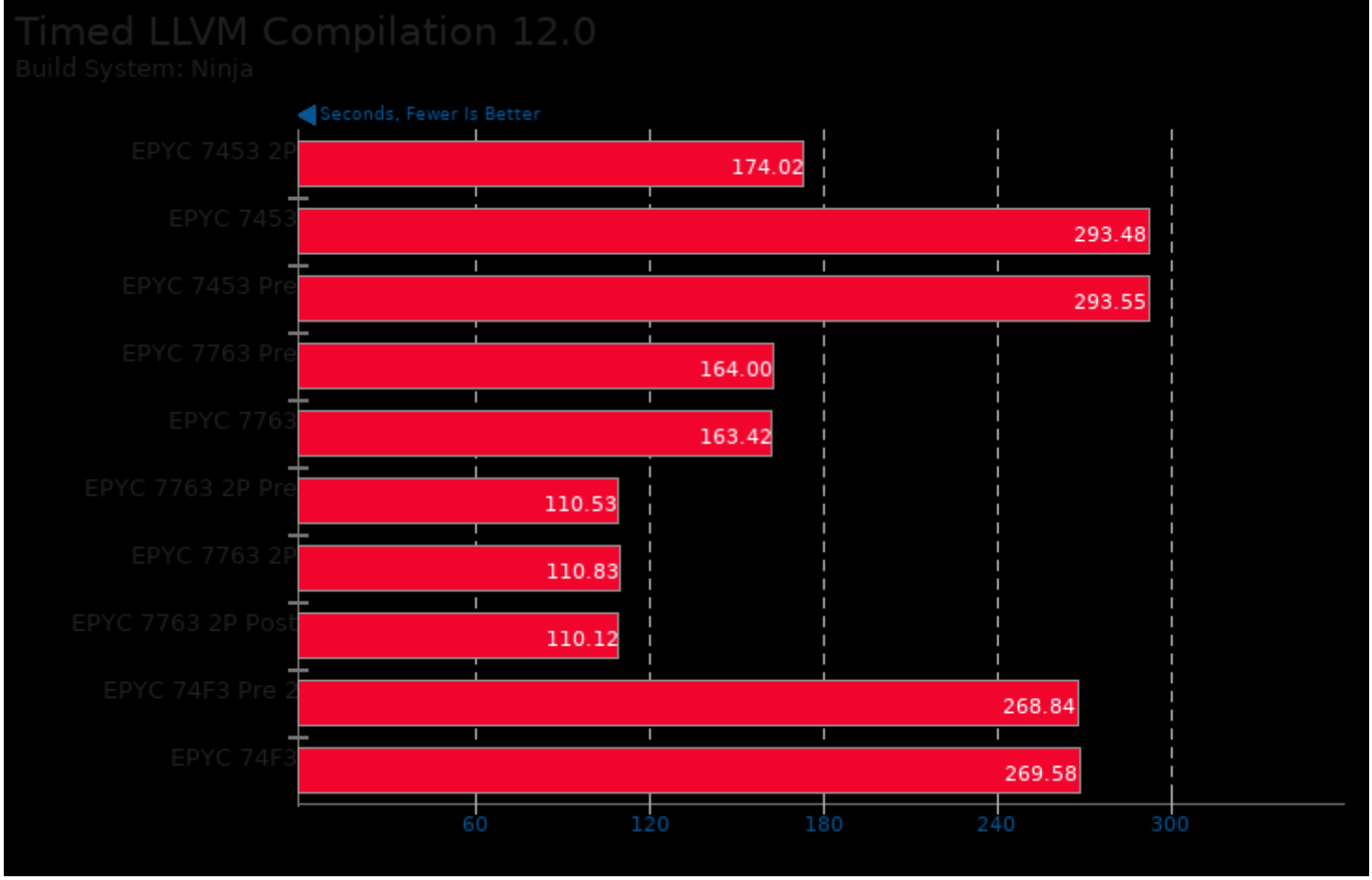
Timed Mesa Compilation - Time To Compile (sec)	21.048	21.397	29.258	**29.281**	20.084	20.216	**18.235**	18.264	18.414	24.923	24.825
Normalized	86.64%	85.22%	62.32%	62.28%	90.79%	90.2%	100%	99.84%	99.03%	73.17%	73.45%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	15.9929914	16.1332226	33.0908089	**33.6974411**	21.5287991	21.9399738	10.8026056	**10.2907734**	10.6876259	25.5810509	27.1003418
Normalized	64.35%	63.79%	31.1%	30.54%	47.8%	46.9%	95.26%	100%	96.29%	40.23%	37.97%
AOM AV1 - Speed 6 Realtime - Bosphorus	28.46	26.68	31.68	31.64	30.99	30.89	**25.12**	28.11	27.64	32.99	**35.33**
Normalized	80.55%	75.52%	89.67%	89.56%	87.72%	87.43%	71.1%	79.56%	78.23%	93.38%	100%
SVT-HEVC - 1 - Bosphorus 1080p (FPS)	38.17	38.41	21.82	22.11	36.23	36.25	41.47	41.27	**41.61**	**21.49**	21.68
Normalized	91.73%	92.31%	52.44%	53.14%	87.07%	87.12%	99.66%	99.18%	100%	51.65%	52.1%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K	41.55	41.67	48.49	47.62	47.63	47.25	**41.06**	41.82	41.3	**52.47**	51.72
Normalized	79.19%	79.42%	92.41%	90.76%	90.78%	90.05%	78.25%	79.7%	78.71%	100%	98.57%
Embree - Pathtracer ISPC - Crown (FPS)	49.2694	49.2407	28.5525	28.617	59.4146	59.3896	**101.7953**	100.7468	100.8912	28.5036	**28.382**
Normalized	48.4%	48.37%	28.05%	28.11%	58.37%	58.34%	100%	98.97%	99.11%	28%	27.88%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	46.0532	46.3929	33.2235	33.0691	66.0866	66.0913	70.1405	70.5966	**72.0194**	**31.6657**	31.8527
Normalized	63.95%	64.42%	46.13%	45.92%	91.76%	91.77%	97.39%	98.02%	100%	43.97%	44.23%
Embree - Pathtracer - Asian Dragon	48.4188	47.8493	36.6275	36.4978	71.072	70.963	**72.5283**	67.9536	71.2621	**35.2425**	35.335
Normalized	66.76%	65.97%	50.5%	50.32%	97.99%	97.84%	100%	93.69%	98.25%	48.59%	48.72%
Embree - Pathtracer - Crown (FPS)	52.8801	52.9452	31.2562	31.193	64.9209	64.8441	110.0575	**111.6192**	110.5398	31.1955	**31.1735**
Normalized	47.38%	47.43%	28%	27.95%	58.16%	58.09%	98.6%	100%	99.03%	27.95%	27.93%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K	50.42	**49.54**	58.2	58.56	58.45	59.19	52.22	52.89	49.91	**64.92**	64.14
Normalized	77.66%	76.31%	89.65%	90.2%	90.03%	91.17%	80.44%	81.47%	76.88%	100%	98.8%
LuxCoreRender - R.C.a.P - CPU (M samples/sec)	14.71	14.77	14.25	14.36	18.42	18.36	16.14	**22.51**	15.75	**13.58**	13.92
Normalized	65.35%	65.62%	63.31%	63.79%	81.83%	81.56%	71.7%	100%	69.97%	60.33%	61.84%

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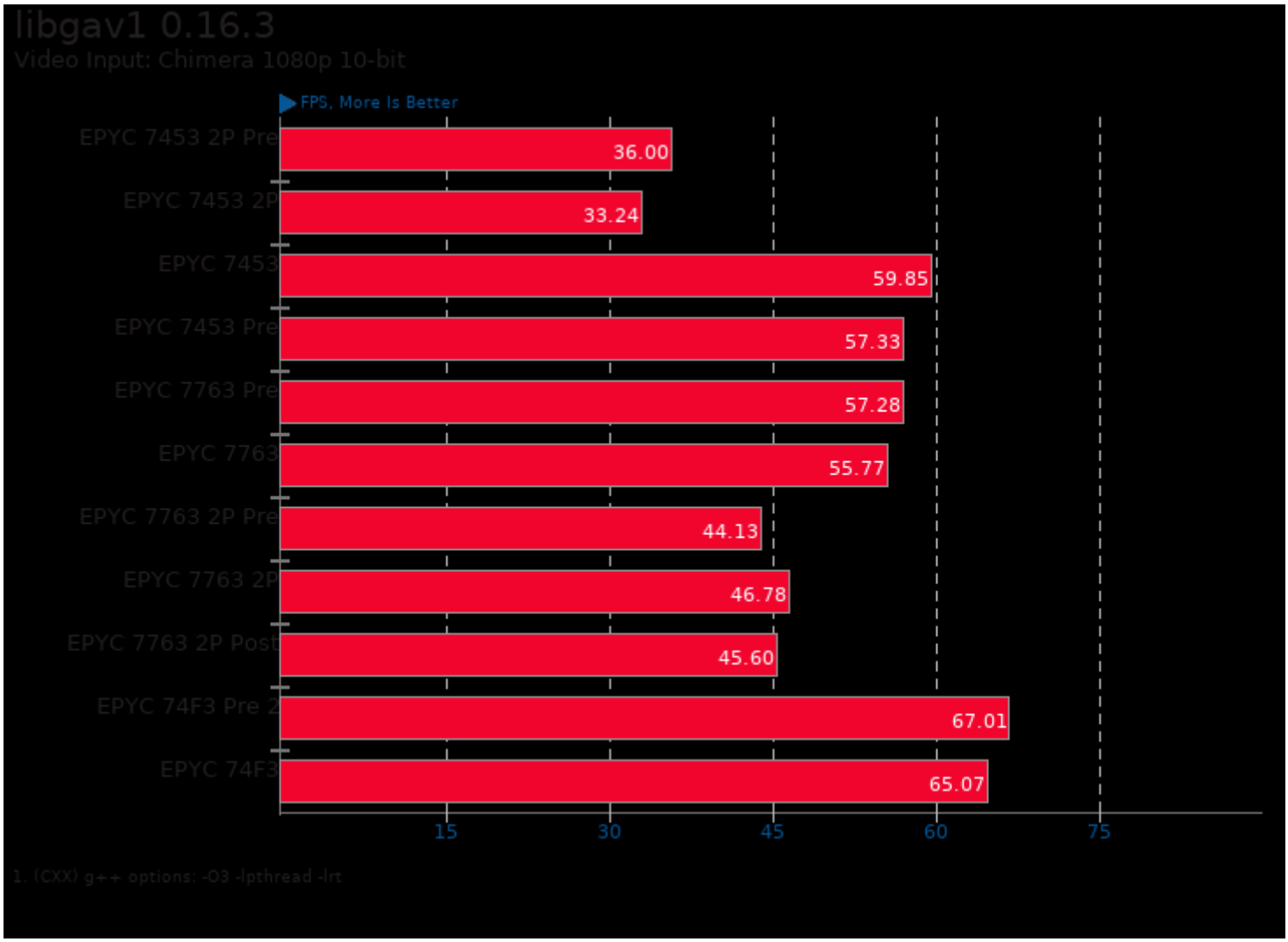
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)		4.44454	7.82194	**7.95374**	5.04648	4.95901	**2.73143**	2.75577		6.18745	6.18932
		718	614	**489**	781	299	**792**	402		518	819
Normalized		61.46%	34.92%	34.34%	54.13%	55.08%	100%	99.12%		44.14%	44.13%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)		116.394	**110.508**	112.368	155.384	155.281	150.537	**156.287**	155.051	119.62	121.846
Normalized		74.47%	70.71%	71.9%	99.42%	99.36%	96.32%	100%	99.21%	76.54%	77.96%
AOM AV1 - Speed 8 Realtime - Bosphorus	**107.19**	119.35	119.35	118.39	129.45	128.87	124.85	115.83	114.66	139.93	**148.05**
Normalized	72.4%	80.61%	80.61%	79.97%	87.44%	87.04%	84.33%	78.24%	77.45%	94.52%	100%
AOM AV1 - Speed 9 Realtime - Bosphorus	132.67	138.22	142.17	138.48	143.09	146.69	135.47	**132.63**	134.67	**164.78**	161.4
Normalized	80.51%	83.88%	86.28%	84.04%	86.84%	89.02%	82.21%	80.49%	81.73%	100%	97.95%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	228.73	438.66	240.77	434.09	244.24	450.05	**222.09**	394.97	398.73	241.56	**455.57**
Normalized	50.21%	96.29%	52.85%	95.29%	53.61%	98.79%	48.75%	86.7%	87.52%	53.02%	100%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	**354.65**	347.96	339.38	339.75	338.49	342.76	333.5	319.8	**319.09**	352.37	347.71
Normalized	100%	98.11%	95.69%	95.8%	95.44%	96.65%	94.04%	90.17%	89.97%	99.36%	98.04%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	435.47	441.62	424.21	428.78	447.33	**449.33**	420.86	**387.12**	417.72	441.68	444.98
Normalized	96.92%	98.28%	94.41%	95.43%	99.55%	100%	93.66%	86.15%	92.97%	98.3%	99.03%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	322.41	**325.73**	**282.62**	283.29	309.12	314.14	298.36	302.72	304.26	291.83	292.11
Normalized	98.98%	100%	86.77%	86.97%	94.9%	96.44%	91.6%	92.94%	93.41%	89.59%	89.68%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	513.26	499.58	542.01	543.48	**567.11**	560.22	476.57	**441.83**	495.87	555.56	551.98
Normalized	90.5%	88.09%	95.57%	95.83%	100%	98.79%	84.03%	77.91%	87.44%	97.96%	97.33%


WRF 4.2.2
Input: conus 2.5km
Seconds, Fewer Is Better
EPYC 7453 2P
11573.03
EPYC 7763 Pre
16670.89
EPYC 7763
16650.11
EPYC 7763 2P Pre
8474.07
EPYC 7763 2P
8476.65
EPYC 74F3 Pre 2
20758.61
4K
8K
12K
16K
20K
1. (F9X) gfortran options: -O2 -ftree-vectorize -funroll-loops -ffree-form -fconvert=big-endian -frecord-marker=4 -lesmf_time -lwrfio_nf -lnetcdff -lnetcdf
Xcompact3d Incompact3d 2021-03-11
Input: X3D-benchmarking input.i3d
Seconds, Fewer Is Better
EPYC 7453 2P
380.07
EPYC 7453
732.75
EPYC 7453 Pre
731.67
EPYC 7763 Pre
613.66
EPYC 7763
612.73
EPYC 7763 2P Pre
304.67
EPYC 7763 2P
304.14
EPYC 7763 2P Post
304.48
EPYC 74F3 Pre 2
698.18
EPYC 74F3
698.64
160
320
480
640
800
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

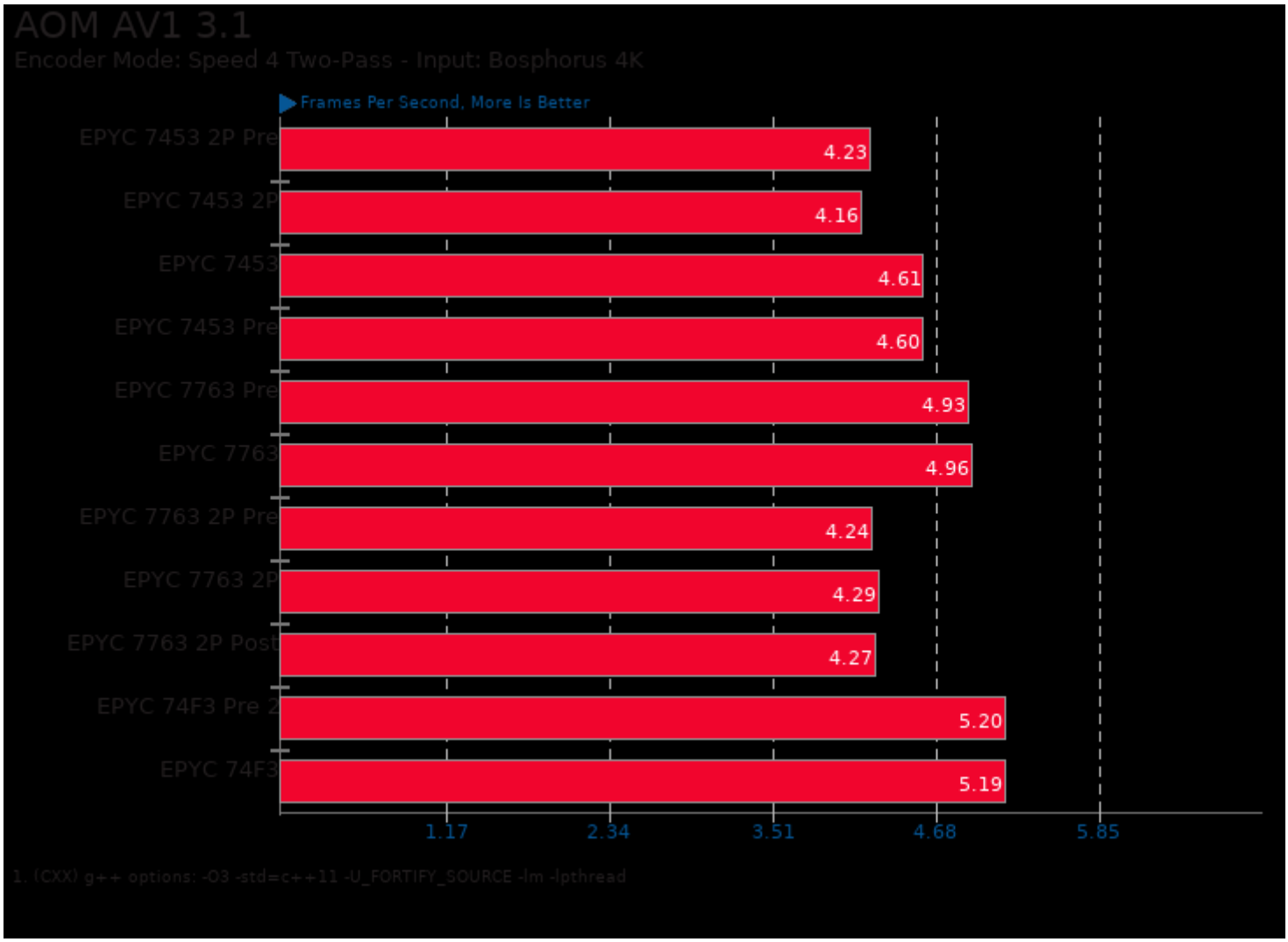

Timed LLVM Compilation 12.0
Build System: Unix Makefiles
Seconds, Fewer Is Better
EPYC 7453 2P
241.29
EPYC 7453
360.35
EPYC 7453 Pre
342.10
EPYC 7763 Pre
234.12
EPYC 7763
235.49
EPYC 7763 2P Pre
205.89
EPYC 7763 2P
204.96
EPYC 7763 2P Post
203.76
EPYC 74F3 Pre 2
314.94
EPYC 74F3
321.71
80
160
240
320
400


Timed LLVM Compilation 12.0
Build System: Ninja
Seconds, Fewer Is Better
EPYC 7453 2P
174.02
EPYC 7453
293.48
EPYC 7453 Pre
293.55
EPYC 7763 Pre
164.00
EPYC 7763
163.42
EPYC 7763 2P Pre
110.53
EPYC 7763 2P
110.83
EPYC 7763 2P Post
110.12
EPYC 74F3 Pre 2
268.84
EPYC 74F3
269.58
60
120
180
240
300

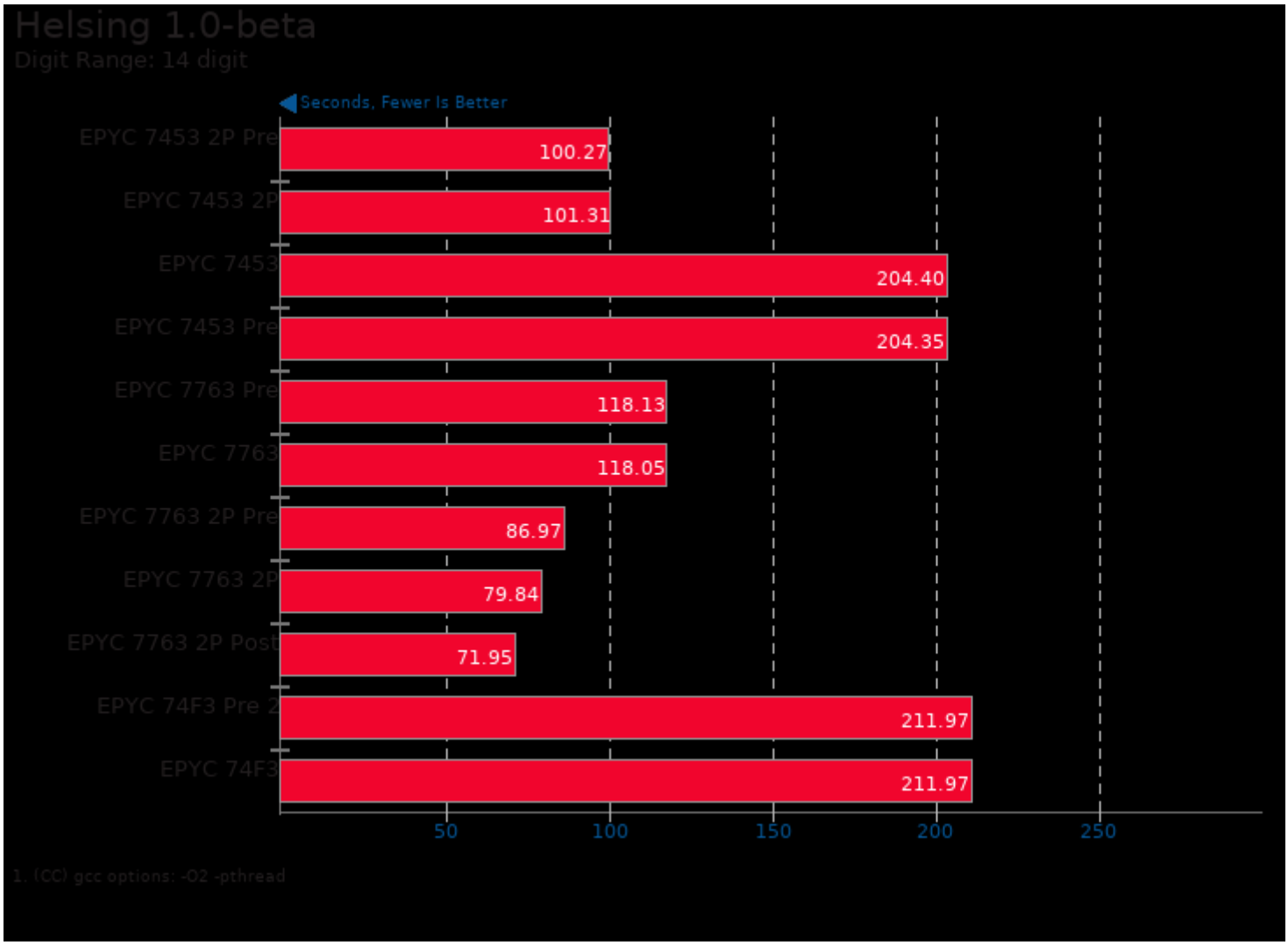
onerun-surplus



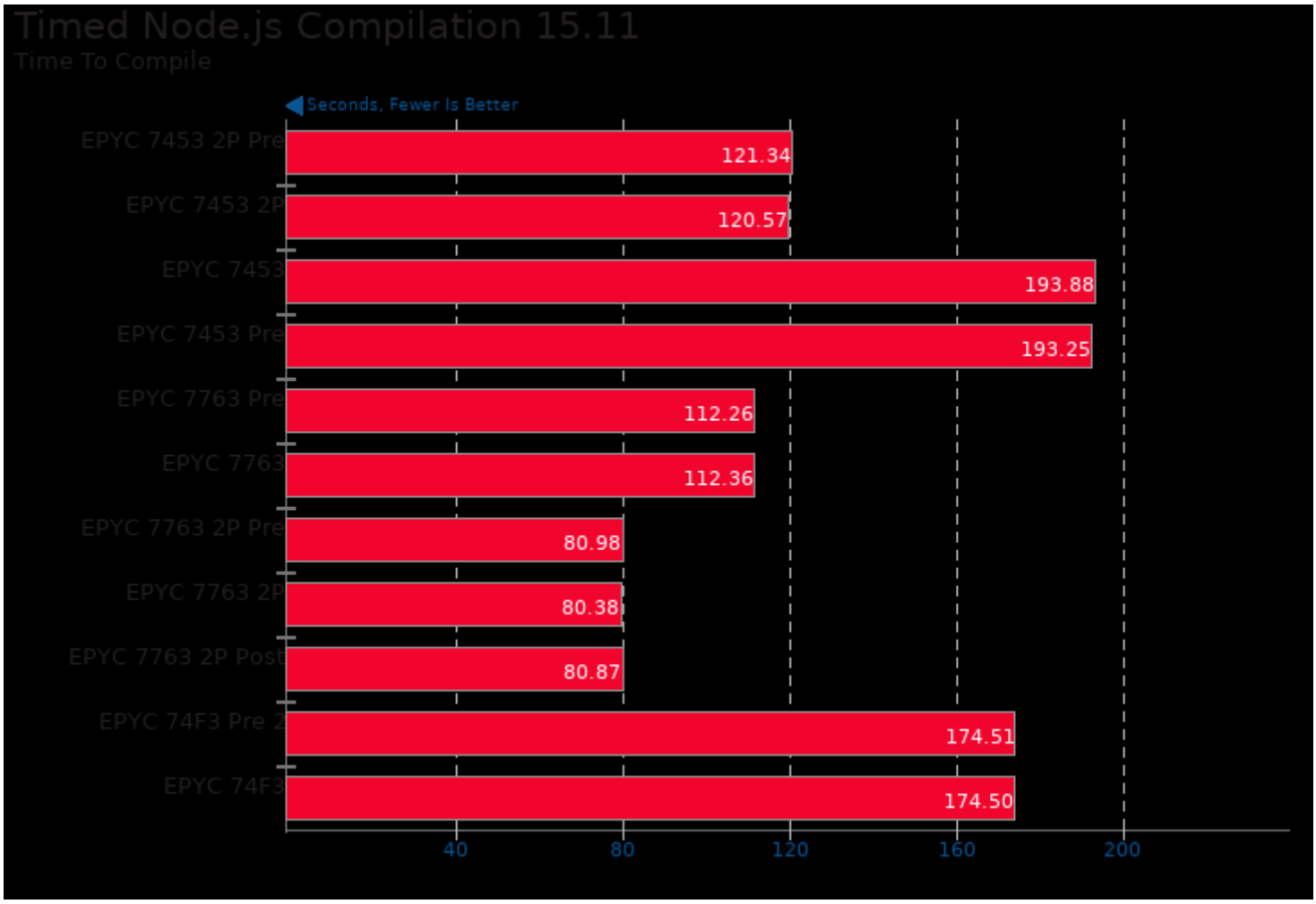
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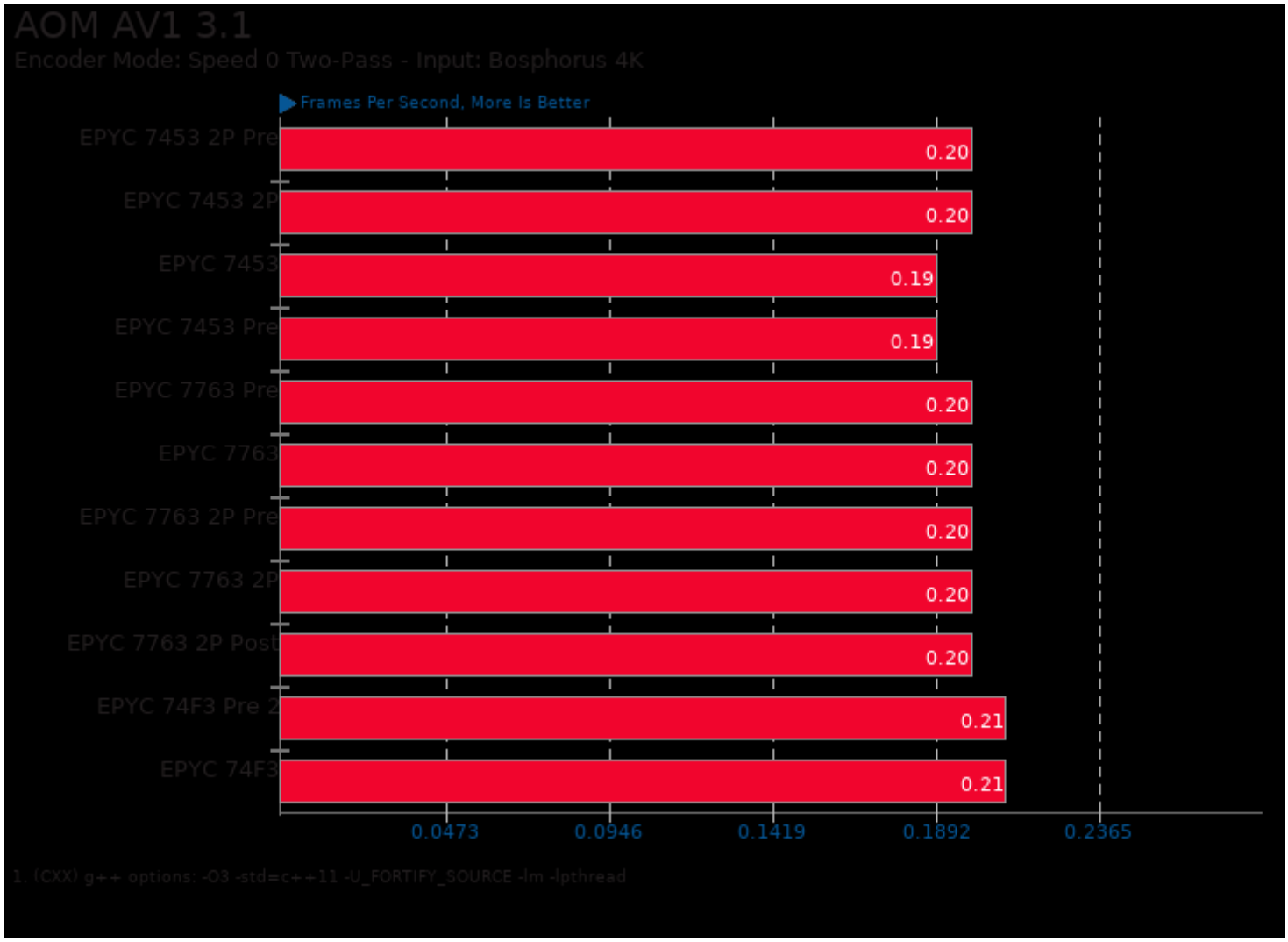
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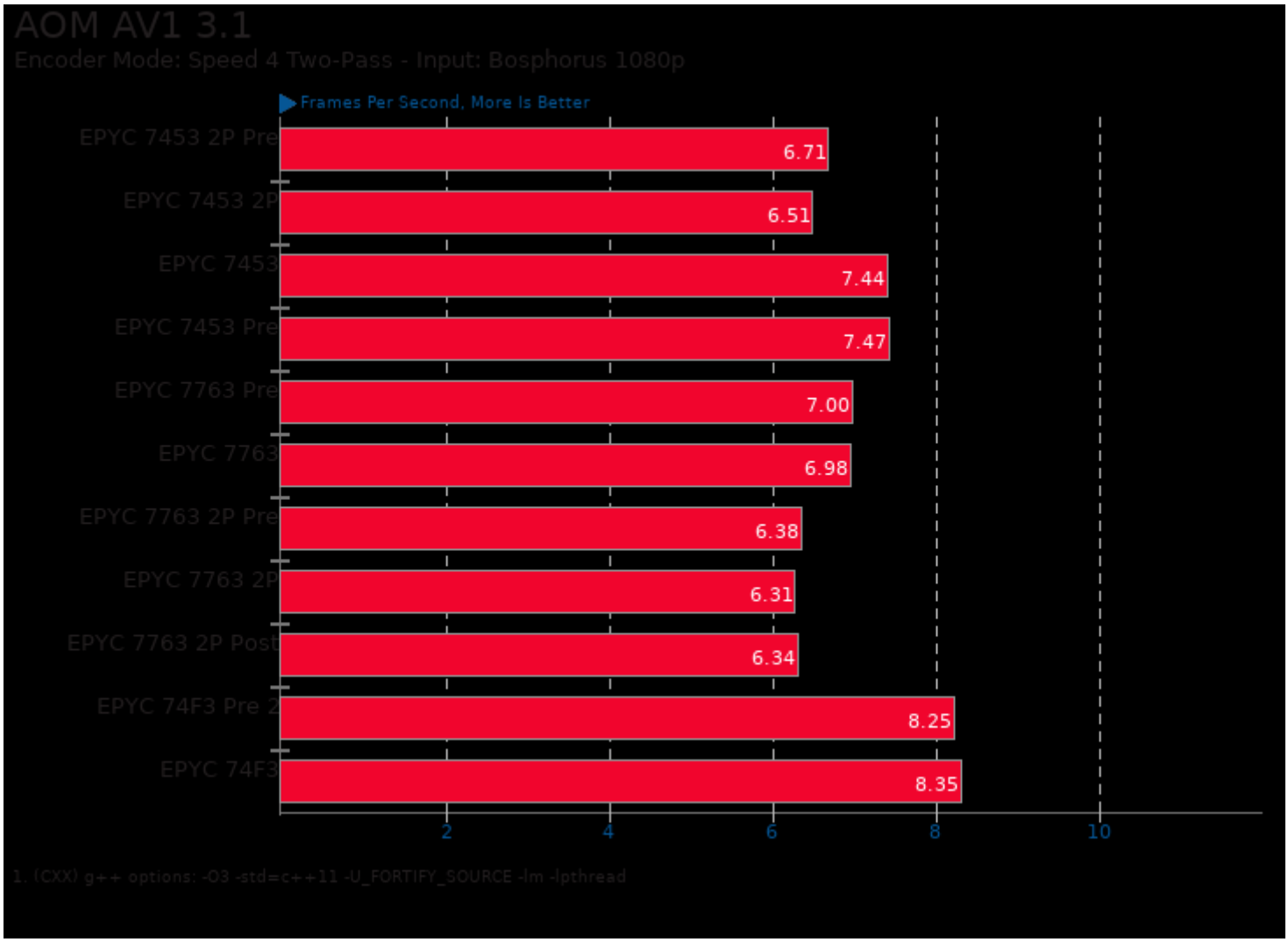
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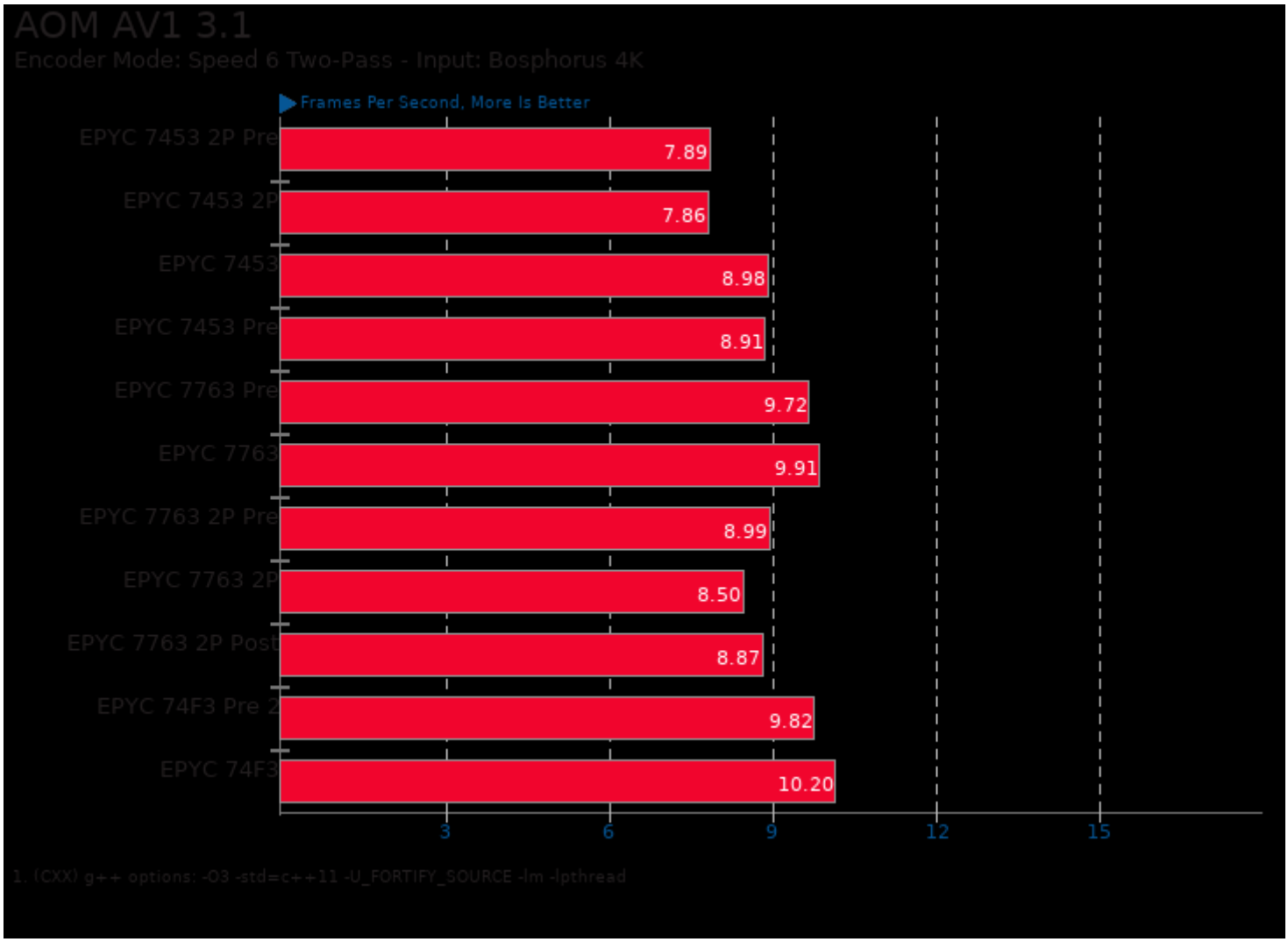
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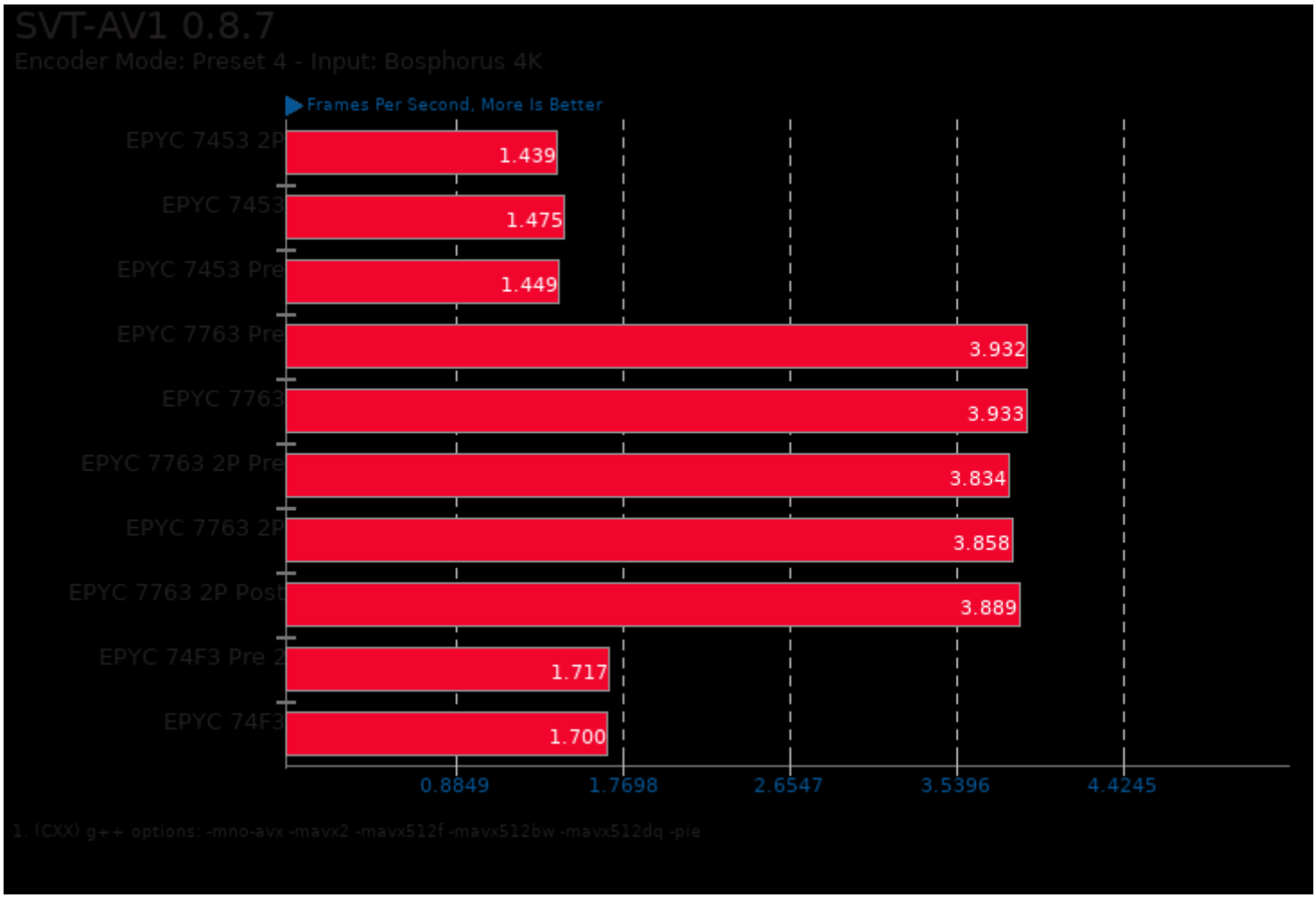
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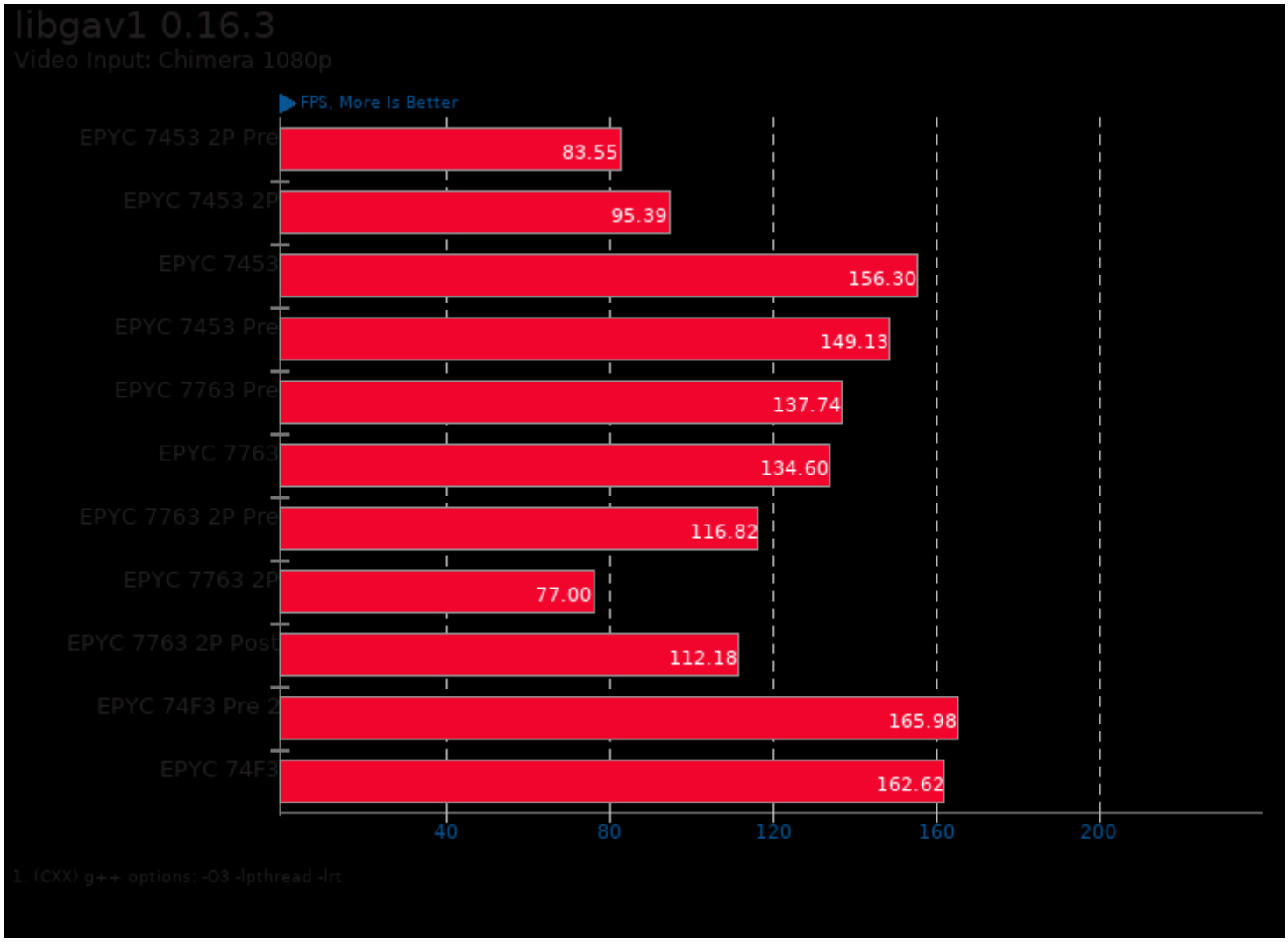
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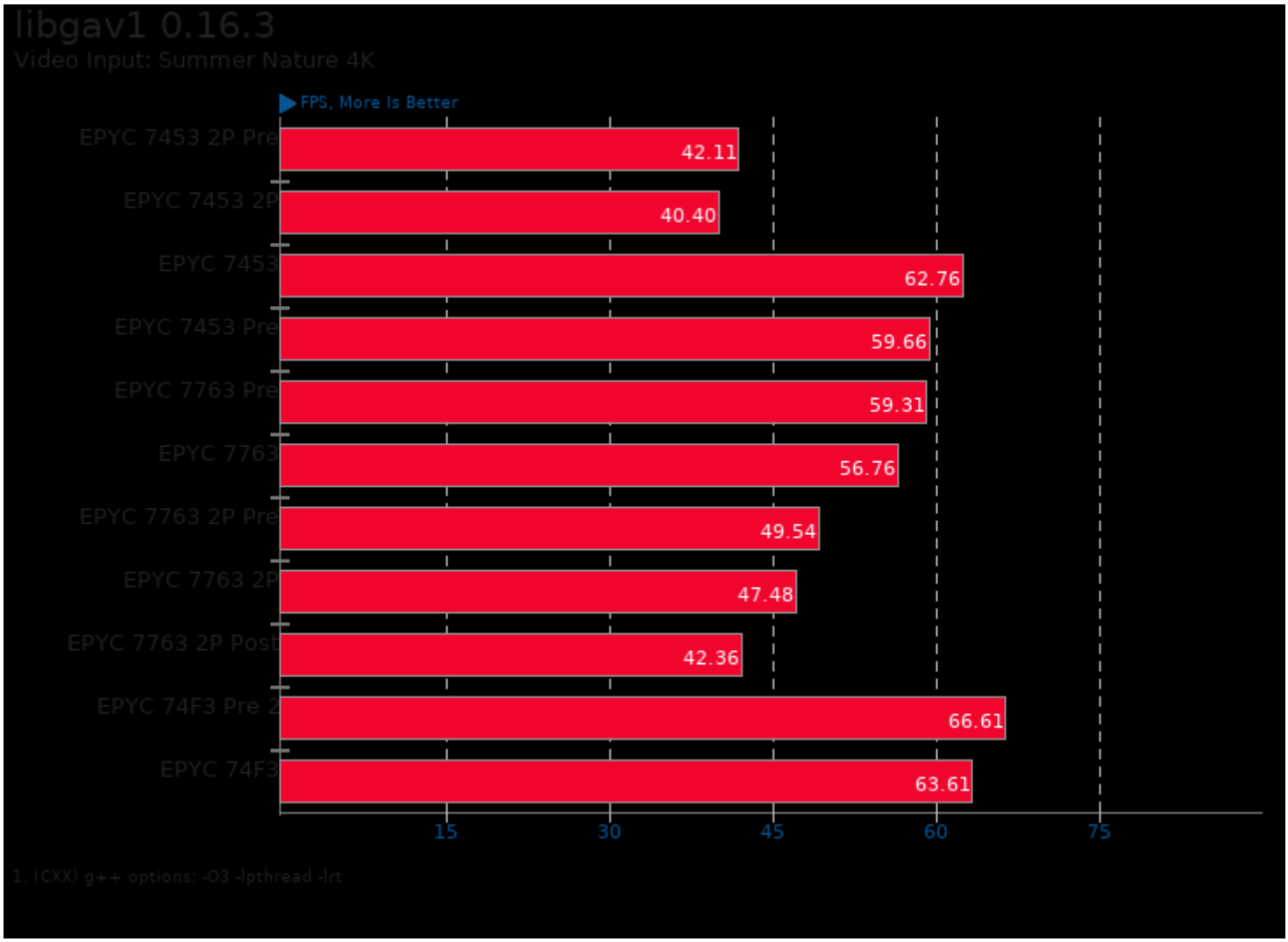
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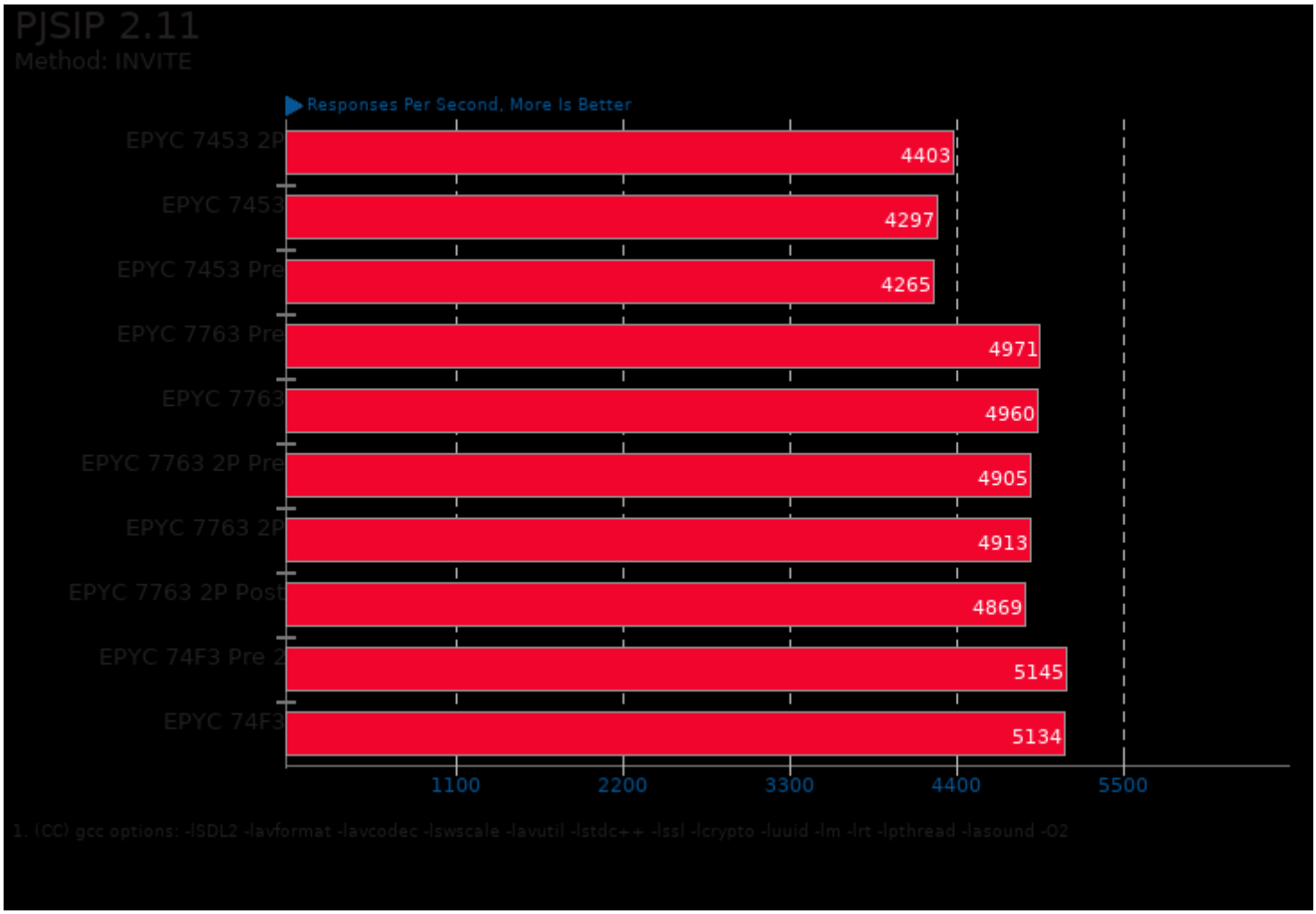
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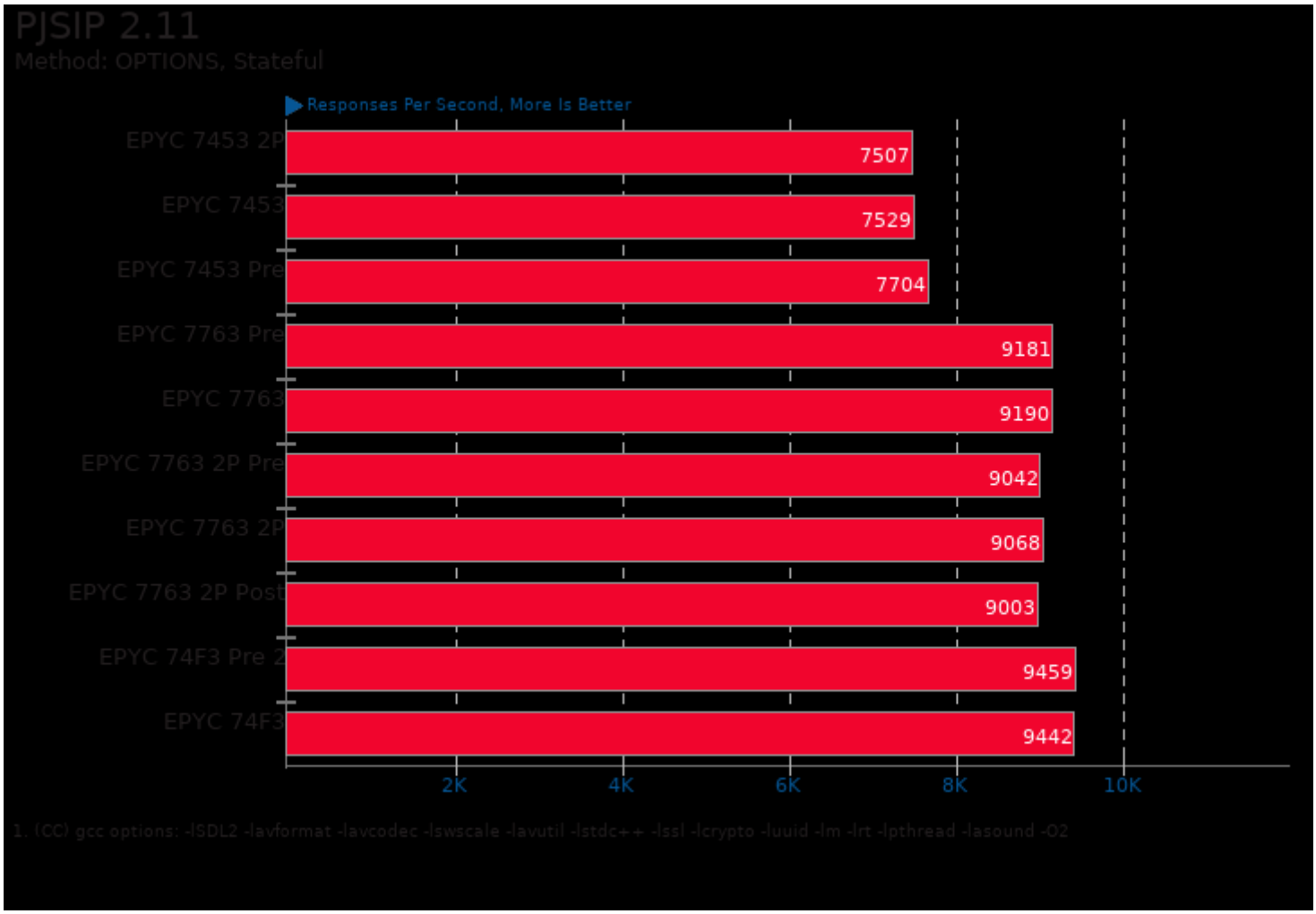
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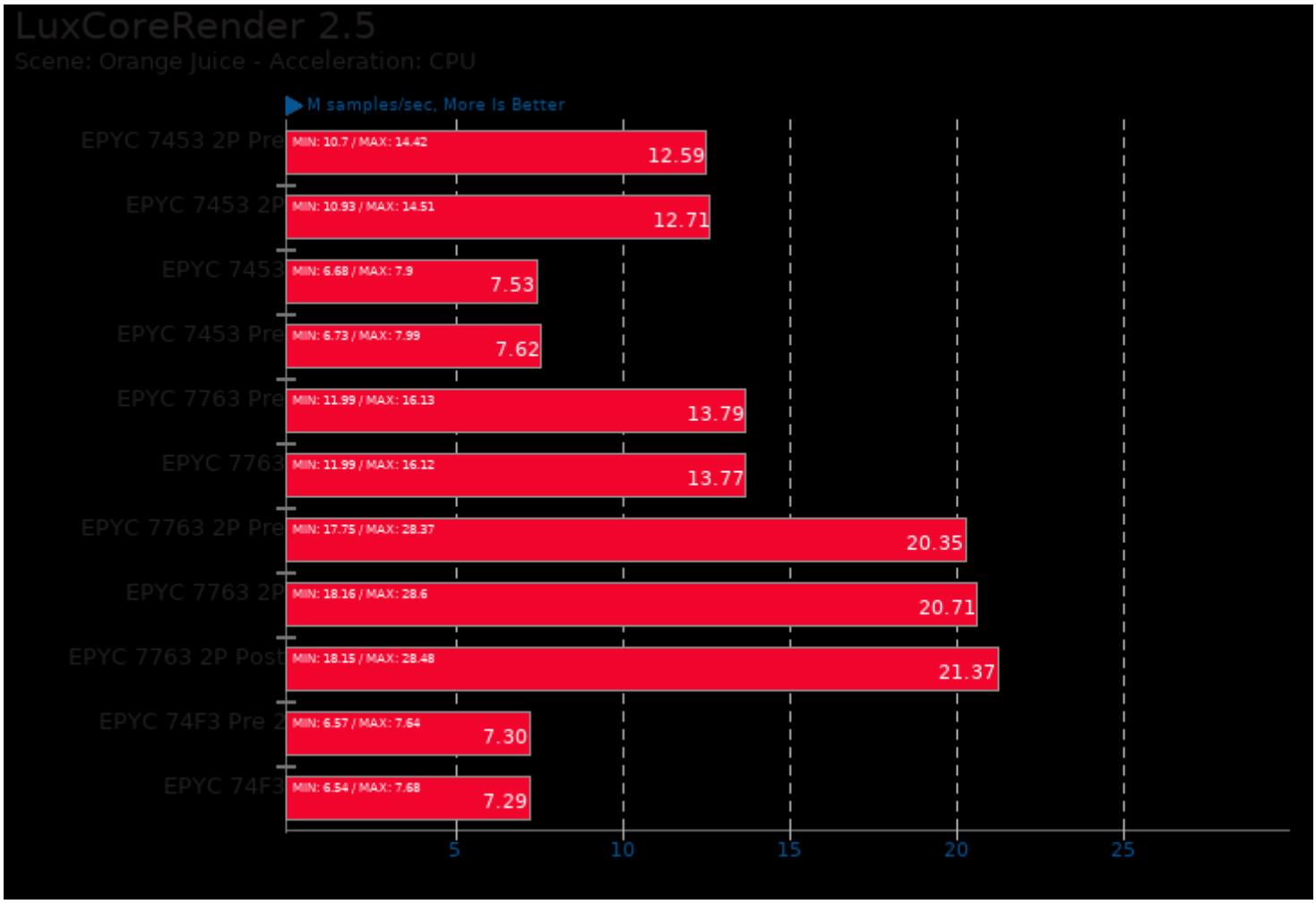
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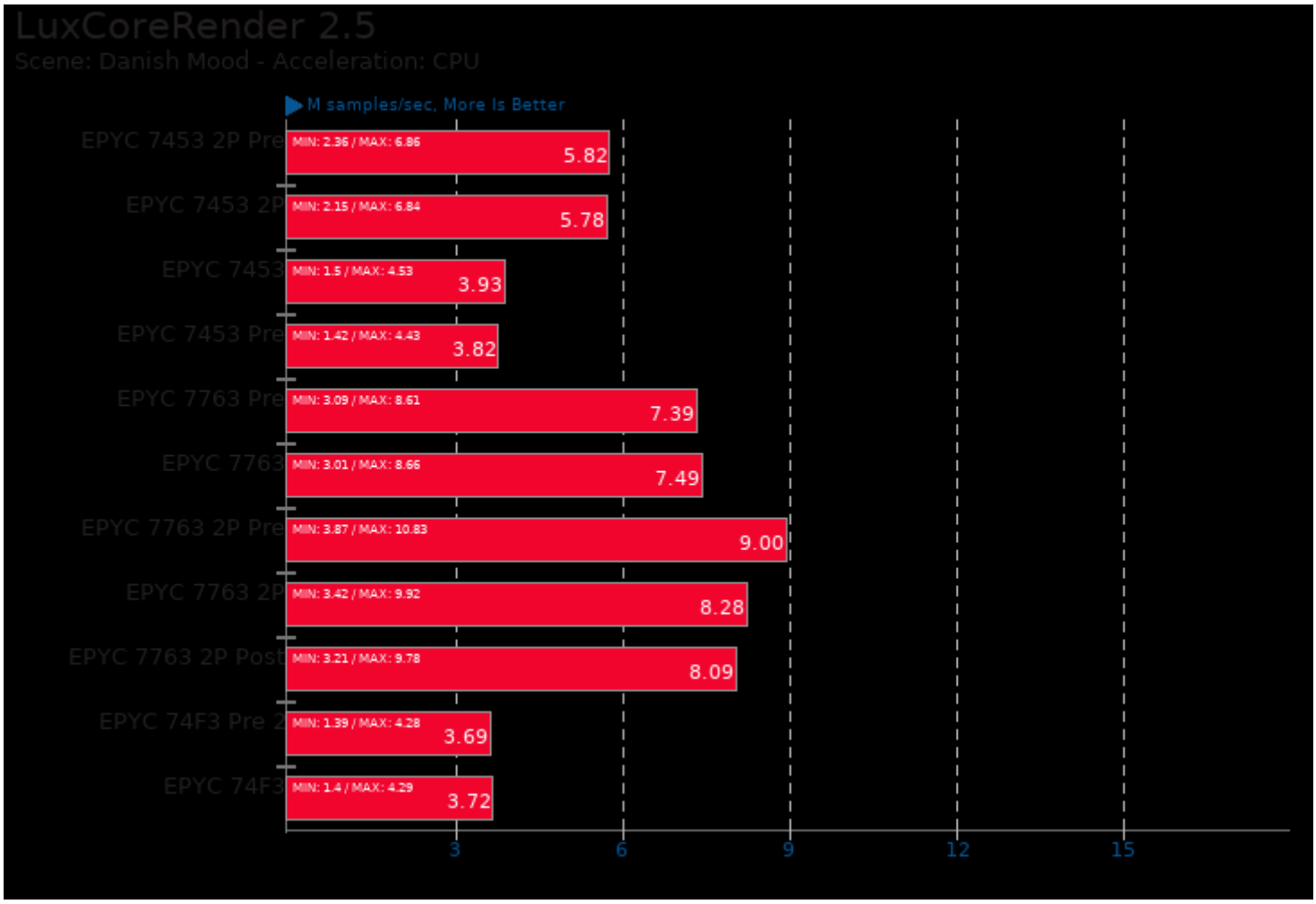
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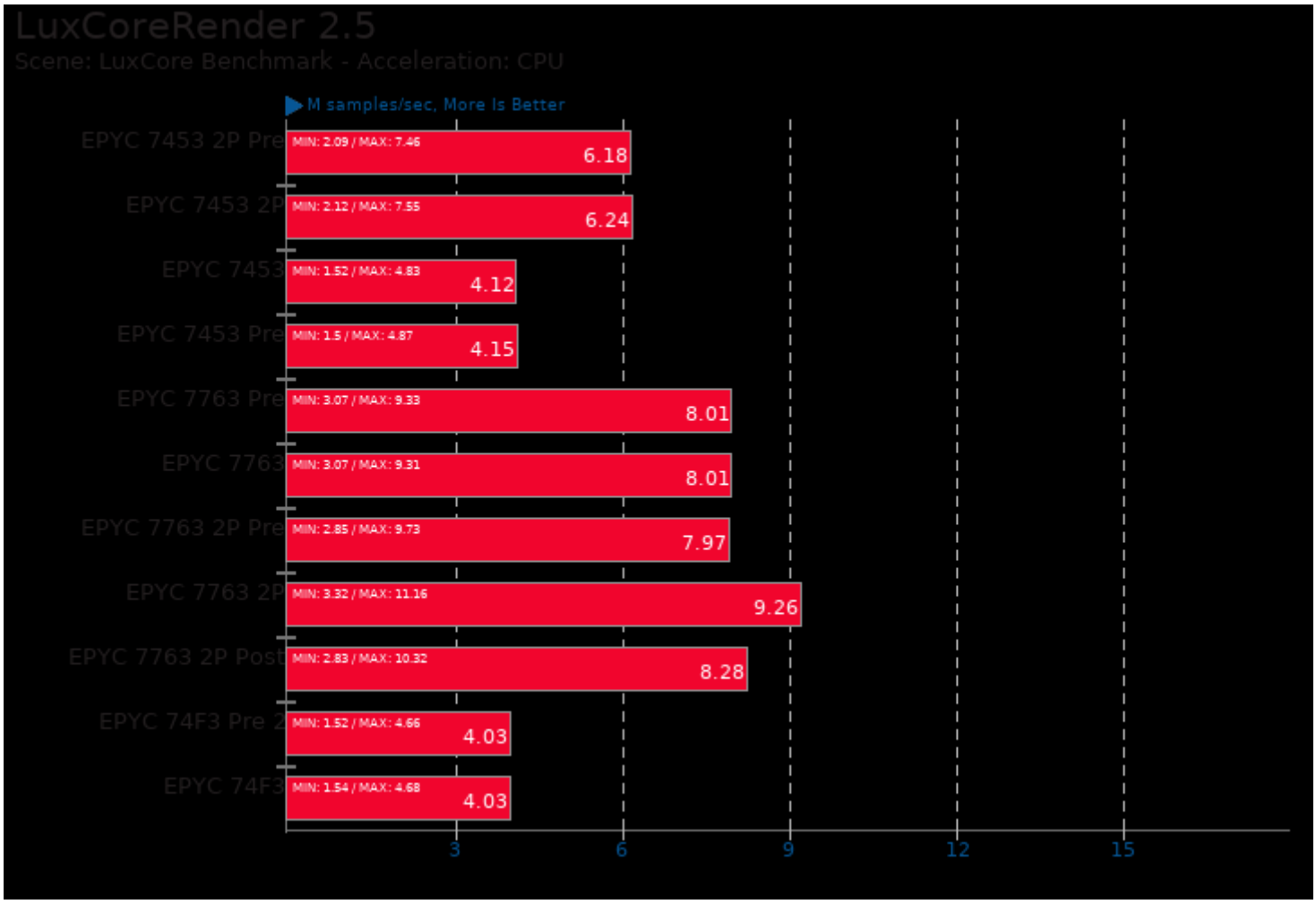
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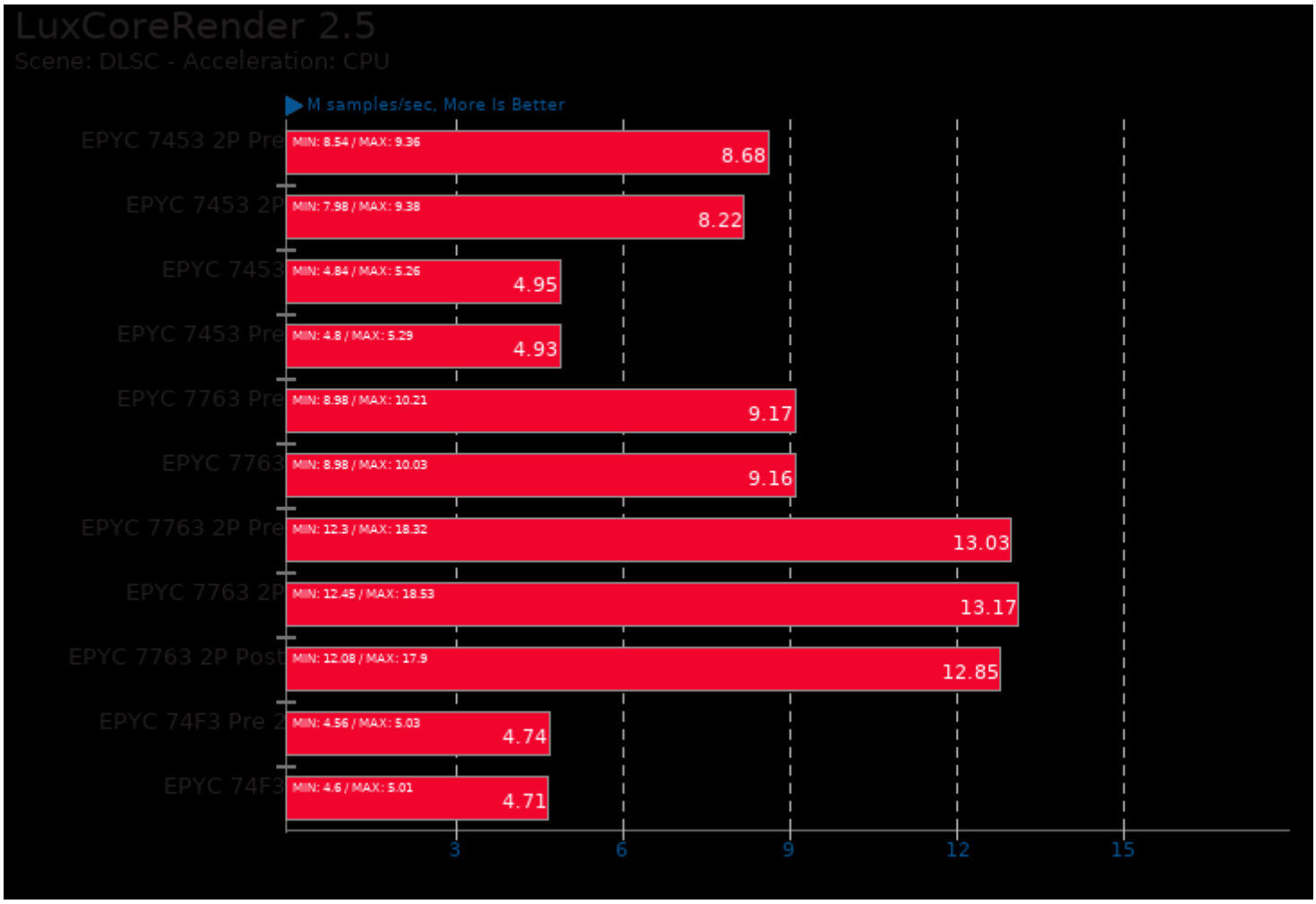


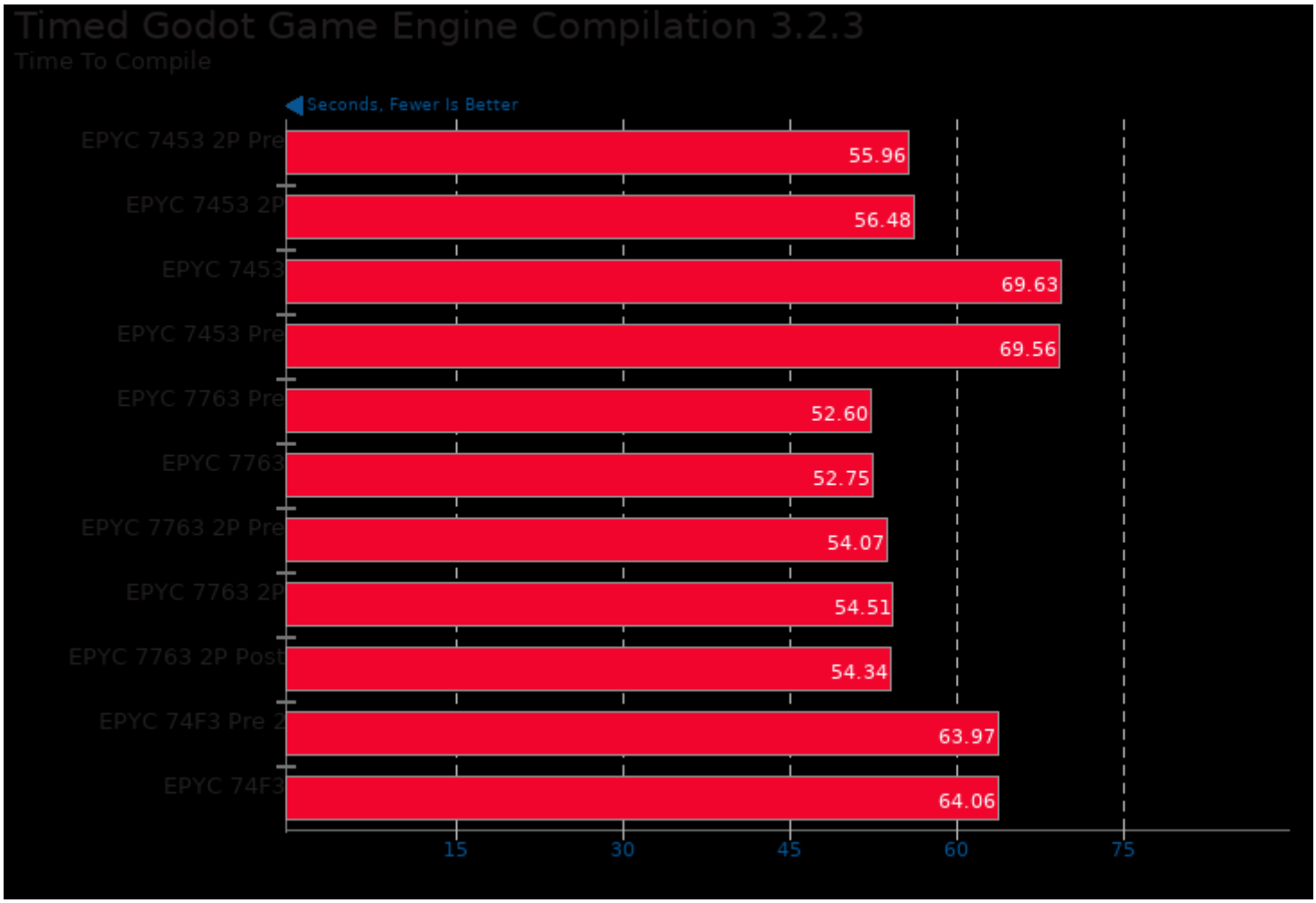
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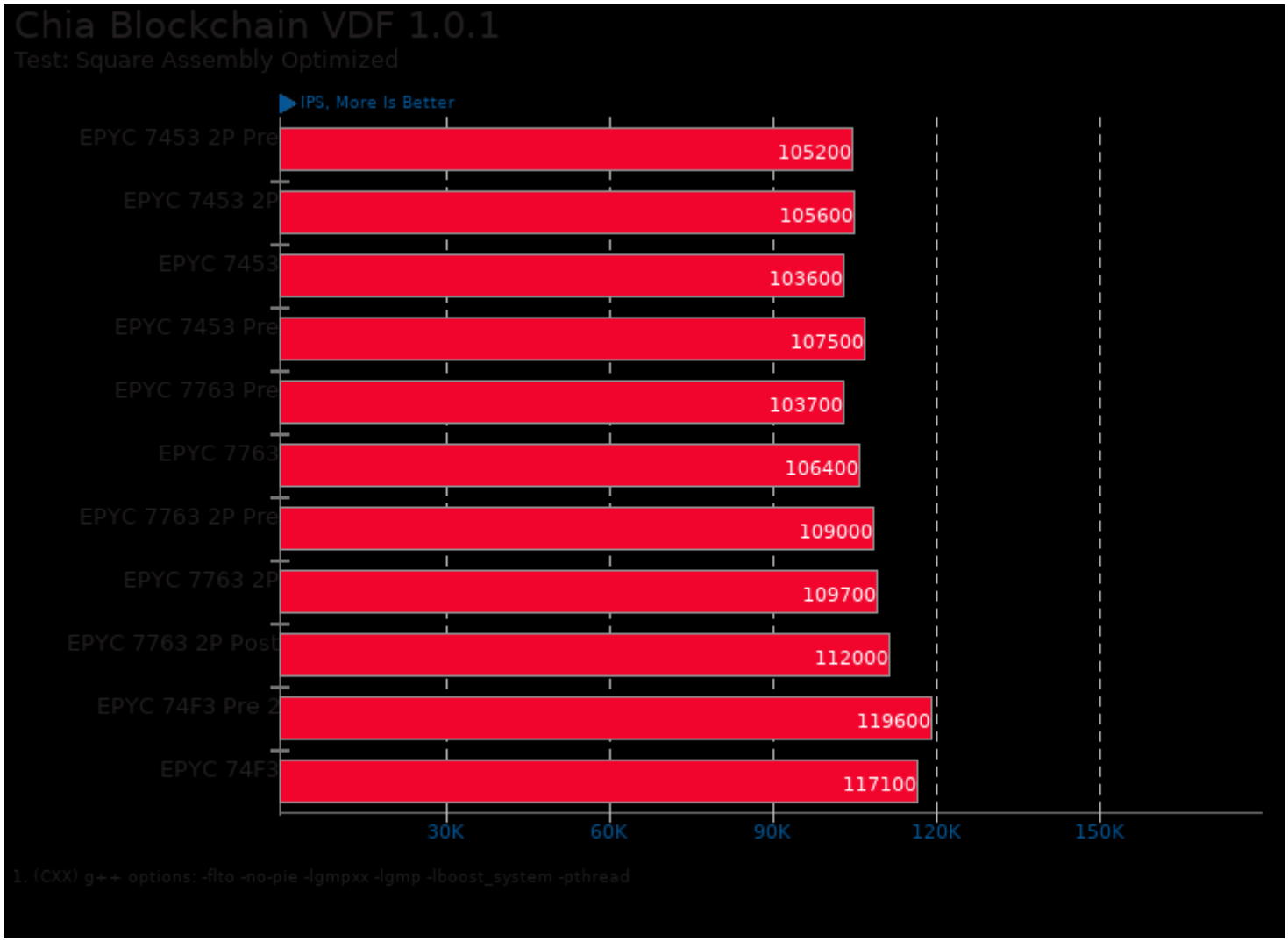


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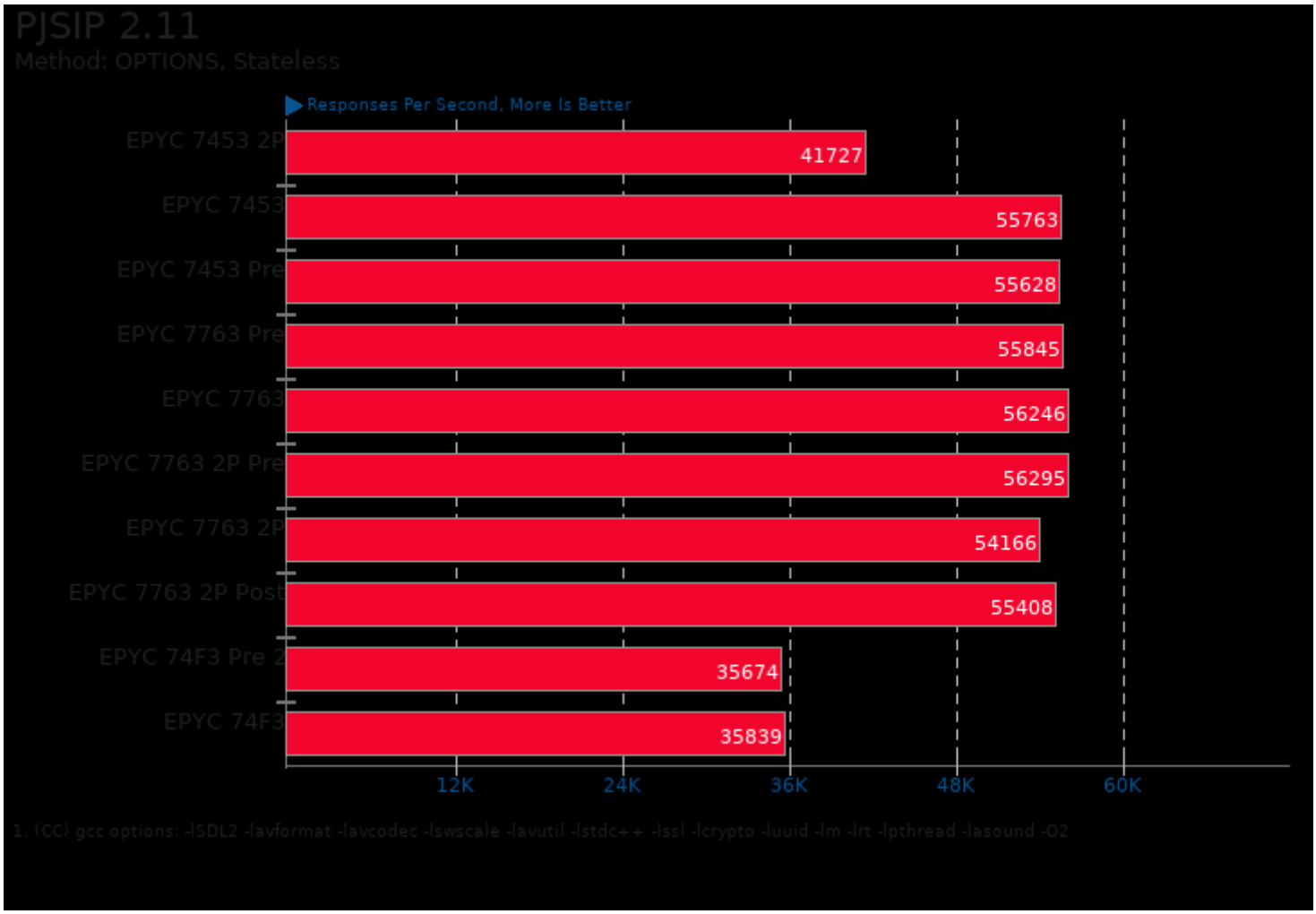



LuxCoreRender 2.5
Scene: DLSC - Acceleration: CPU
M samples/sec, More Is Better
EPYC 7453 2P Pre
MIN: 8.54 / MAX: 9.36
8.68
EPYC 7453 2P
MIN: 7.98 / MAX: 9.38
8.22
EPYC 7453
MIN: 4.84 / MAX: 5.26
4.95
EPYC 7453 Pre
MIN: 4.8 / MAX: 5.29
4.93
EPYC 7763 Pre
MIN: 8.98 / MAX: 10.21
9.17
EPYC 7763
MIN: 8.98 / MAX: 10.03
9.16
EPYC 7763 2P Pre
MIN: 12.3 / MAX: 18.32
13.03
EPYC 7763 2P
MIN: 12.45 / MAX: 18.53
13.17
EPYC 7763 2P Post
MIN: 12.08 / MAX: 17.9
12.85
EPYC 74F3 Pre 2
MIN: 4.56 / MAX: 5.03
4.74
EPYC 74F3
MIN: 4.6 / MAX: 5.01
4.71
3
6
9
12
15

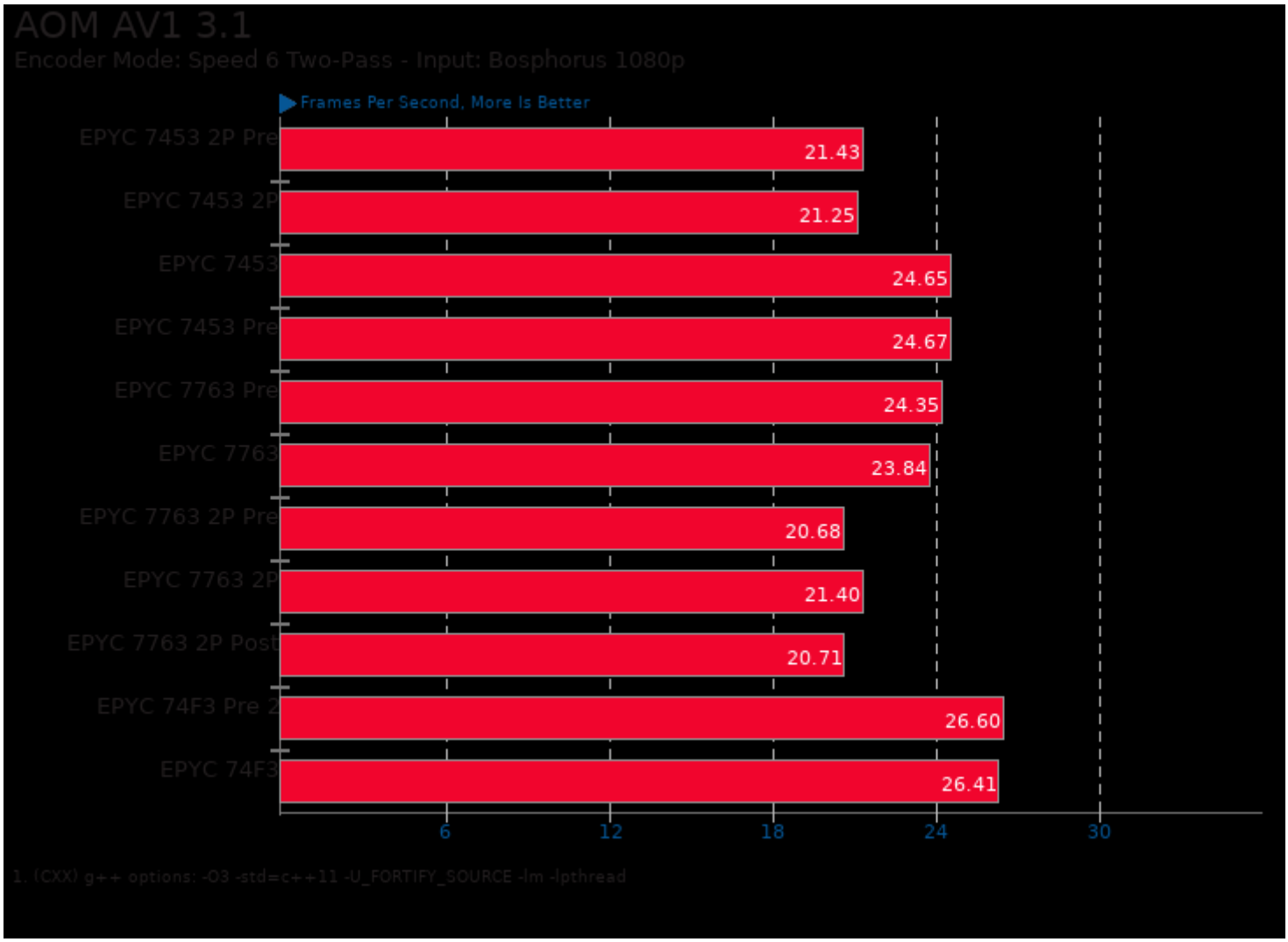

Timed Godot Game Engine Compilation 3.2.3
Time To Compile
Seconds, Fewer Is Better
EPYC 7453 2P Pre
55.96
EPYC 7453 2P
56.48
EPYC 7453
69.63
EPYC 7453 Pre
69.56
EPYC 7763 Pre
52.60
EPYC 7763
52.75
EPYC 7763 2P Pre
54.07
EPYC 7763 2P
54.51
EPYC 7763 2P Post
54.34
EPYC 74F3 Pre 2
63.97
EPYC 74F3
64.06
15
30
45
60
75

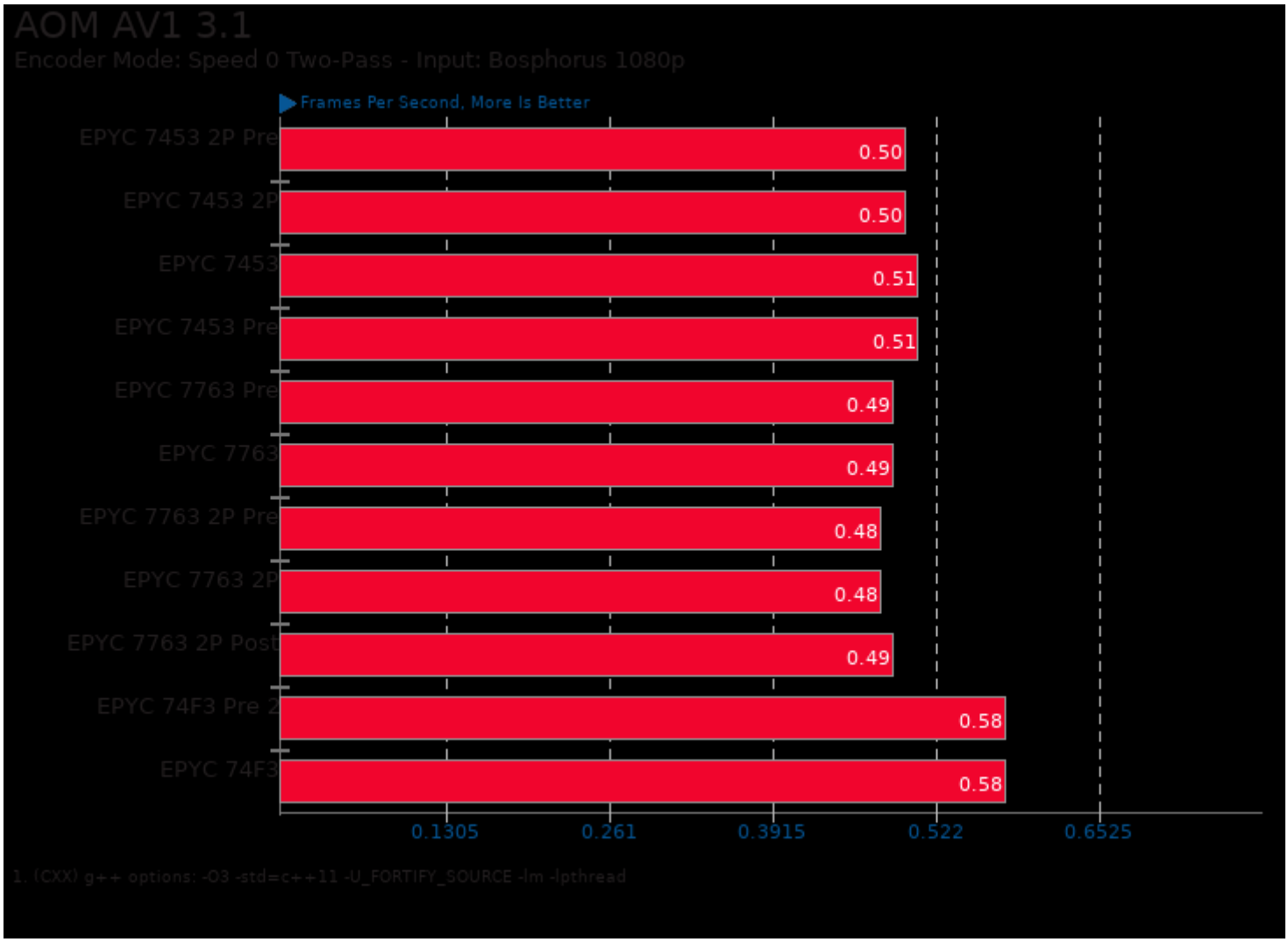

Chia Blockchain VDF 1.0.1
Test: Square Assembly Optimized
IPS, More Is Better
EPYC 7453 2P Pre
EPYC 7453 2P
EPYC 7453
EPYC 7453 Pre
EPYC 7763 Pre
EPYC 7763
EPYC 7763 2P Pre
EPYC 7763 2P
EPYC 7763 2P Post
EPYC 74F3 Pre 2
EPYC 74F3
105200
105600
103600
107500
103700
106400
109000
109700
112000
119600
117100
30K
60K
90K
120K
150K
1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

onerun-surplus

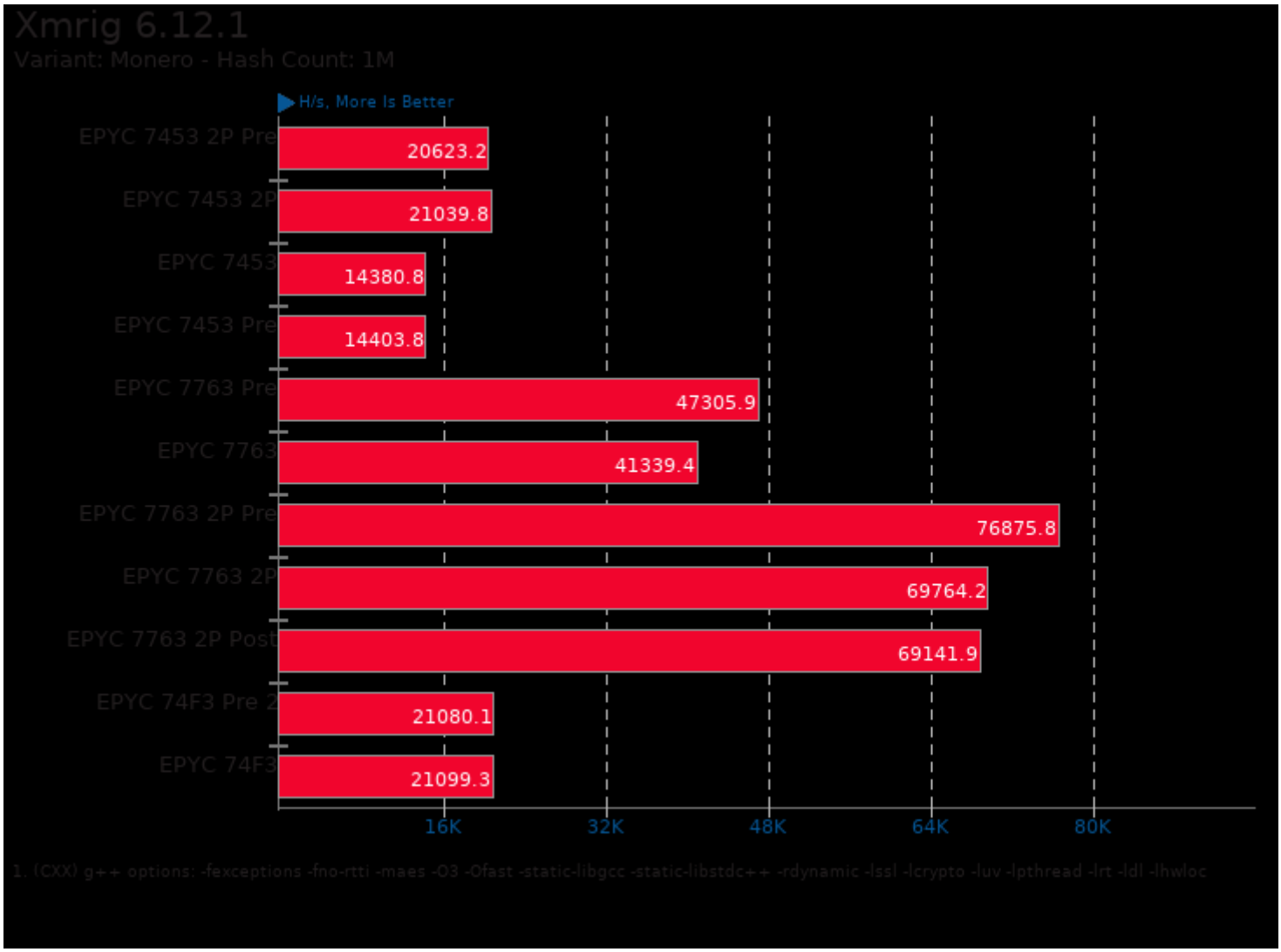


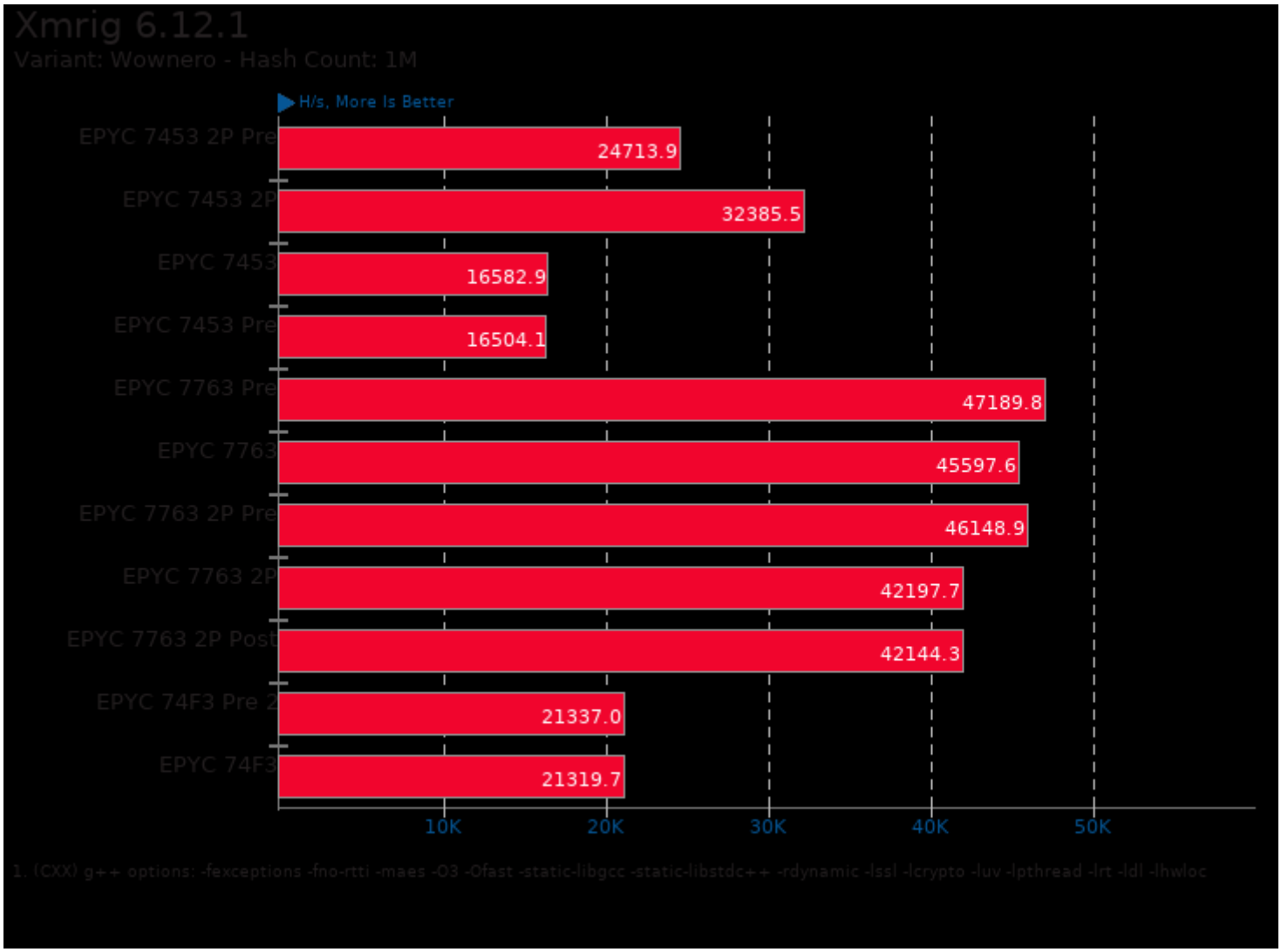
onerun-surplus



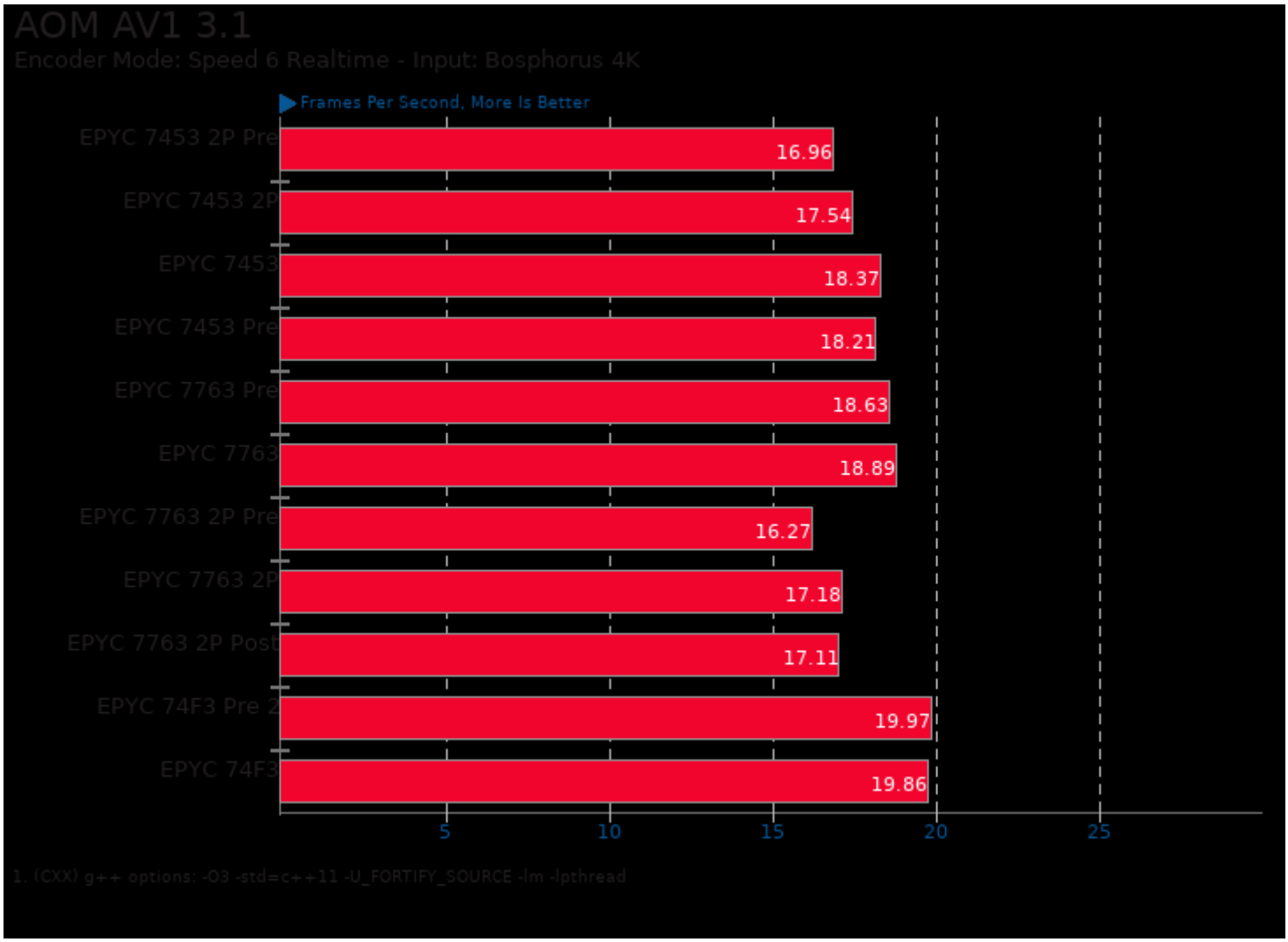

AOM AV1 3.1
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
EPYC 7453 2P Pre
EPYC 7453 2P
EPYC 7453
EPYC 7453 Pre
EPYC 7763 Pre
EPYC 7763
EPYC 7763 2P Pre
EPYC 7763 2P
EPYC 7763 2P Post
EPYC 74F3 Pre 2
EPYC 74F3
0.50
0.50
0.51
0.51
0.49
0.49
0.48
0.48
0.49
0.58
0.58
0.1305
0.261
0.3915
0.522
0.6525
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

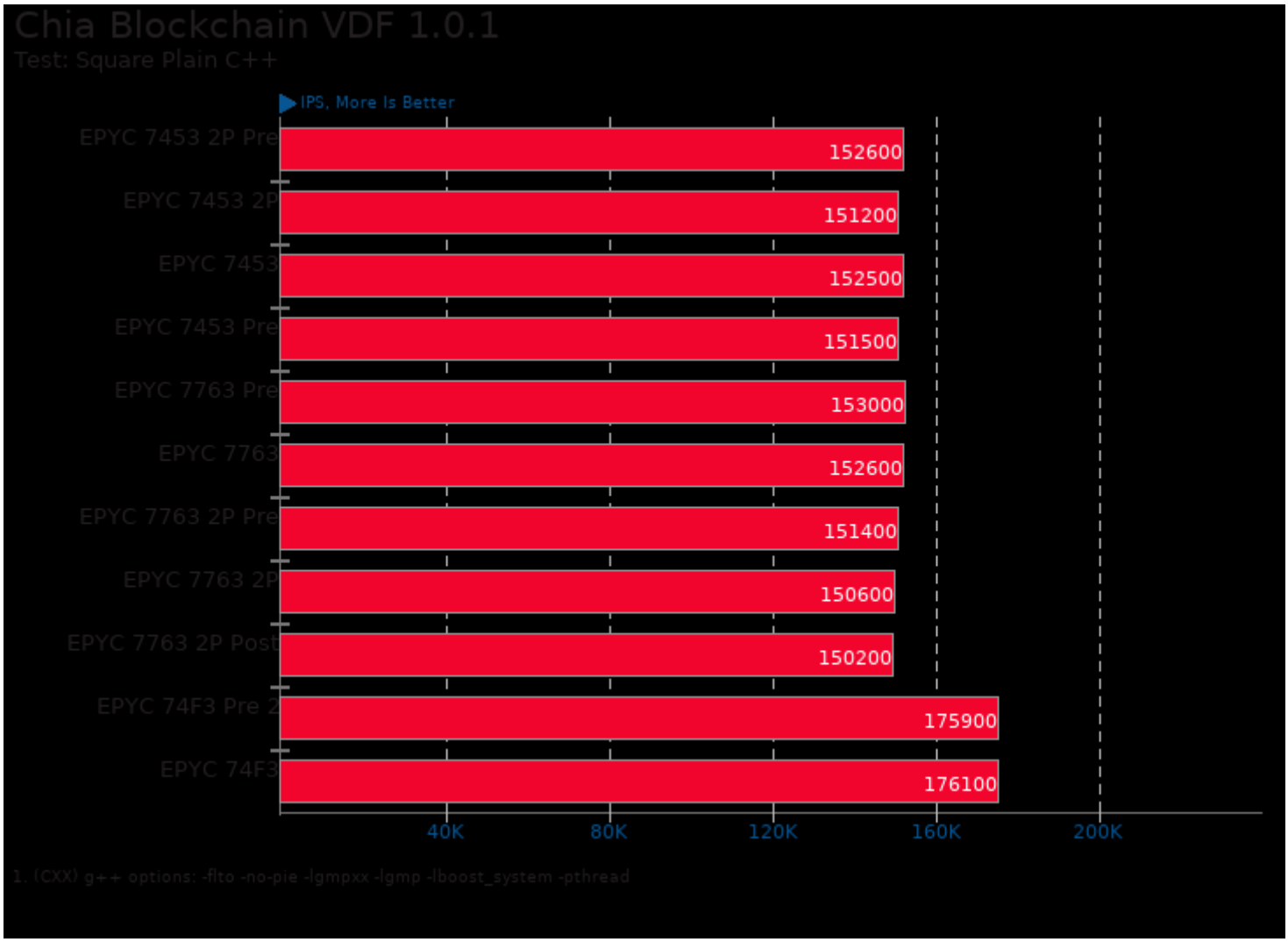
onerun-surplus



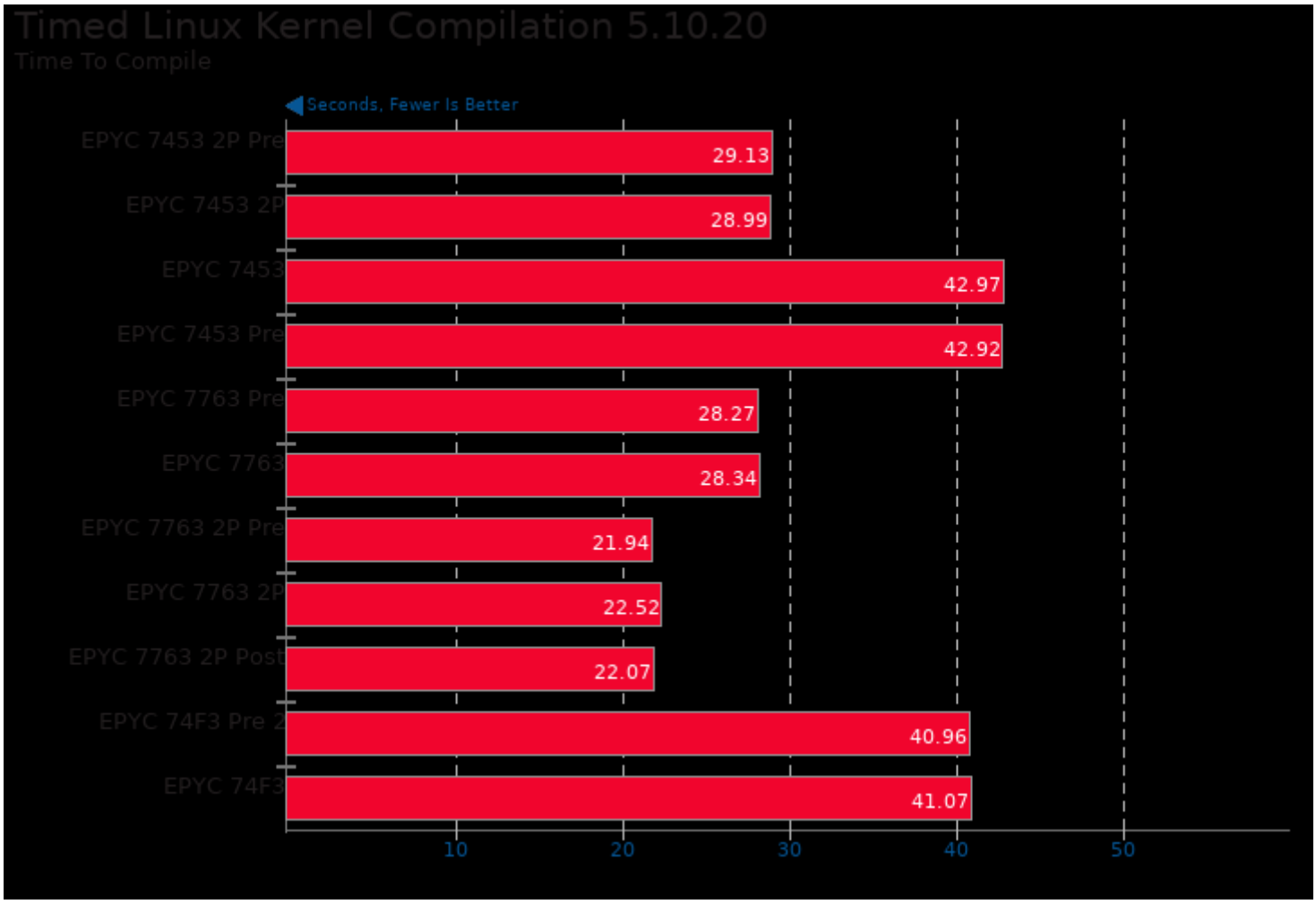

Xmrig 6.12.1
Variant: Wownero - Hash Count: 1M
H/s, More Is Better
EPYC 7453 2P Pre
24713.9
EPYC 7453 2P
32385.5
EPYC 7453
16582.9
EPYC 7453 Pre
16504.1
EPYC 7763 Pre
47189.8
EPYC 7763
45597.6
EPYC 7763 2P Pre
46148.9
EPYC 7763 2P
42197.7
EPYC 7763 2P Post
42144.3
EPYC 74F3 Pre 2
21337.0
EPYC 74F3
21319.7
10K
20K
30K
40K
50K
1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

onerun-surplus

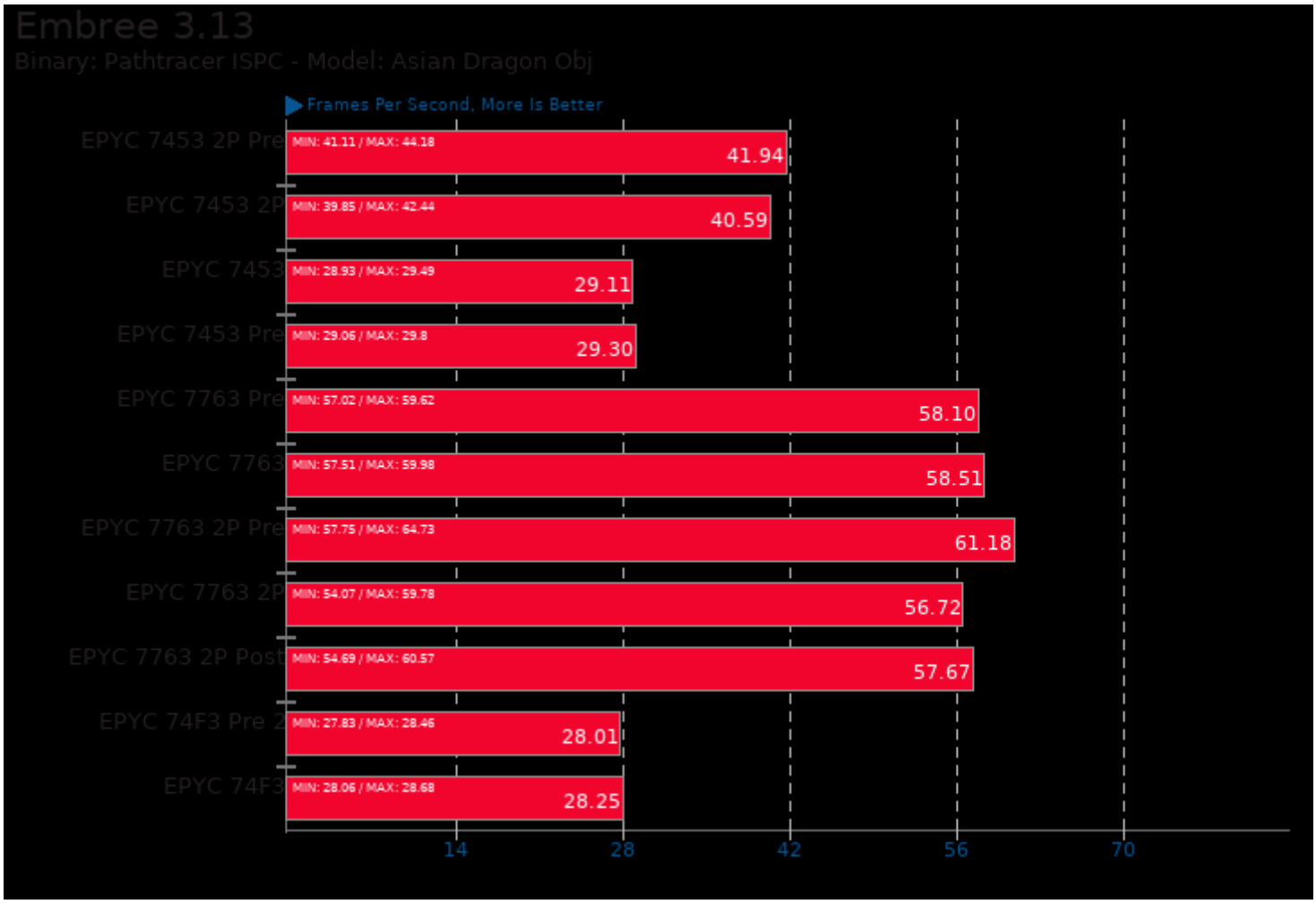



Chia Blockchain VDF 1.0.1
Test: Square Plain C++
IPS, More Is Better
EPYC 7453 2P Pre
EPYC 7453 2P
EPYC 7453
EPYC 7453 Pre
EPYC 7763 Pre
EPYC 7763
EPYC 7763 2P Pre
EPYC 7763 2P
EPYC 7763 2P Post
EPYC 74F3 Pre 2
EPYC 74F3
152600
151200
152500
151500
153000
152600
151400
150600
150200
175900
176100
40K
80K
120K
160K
200K
1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

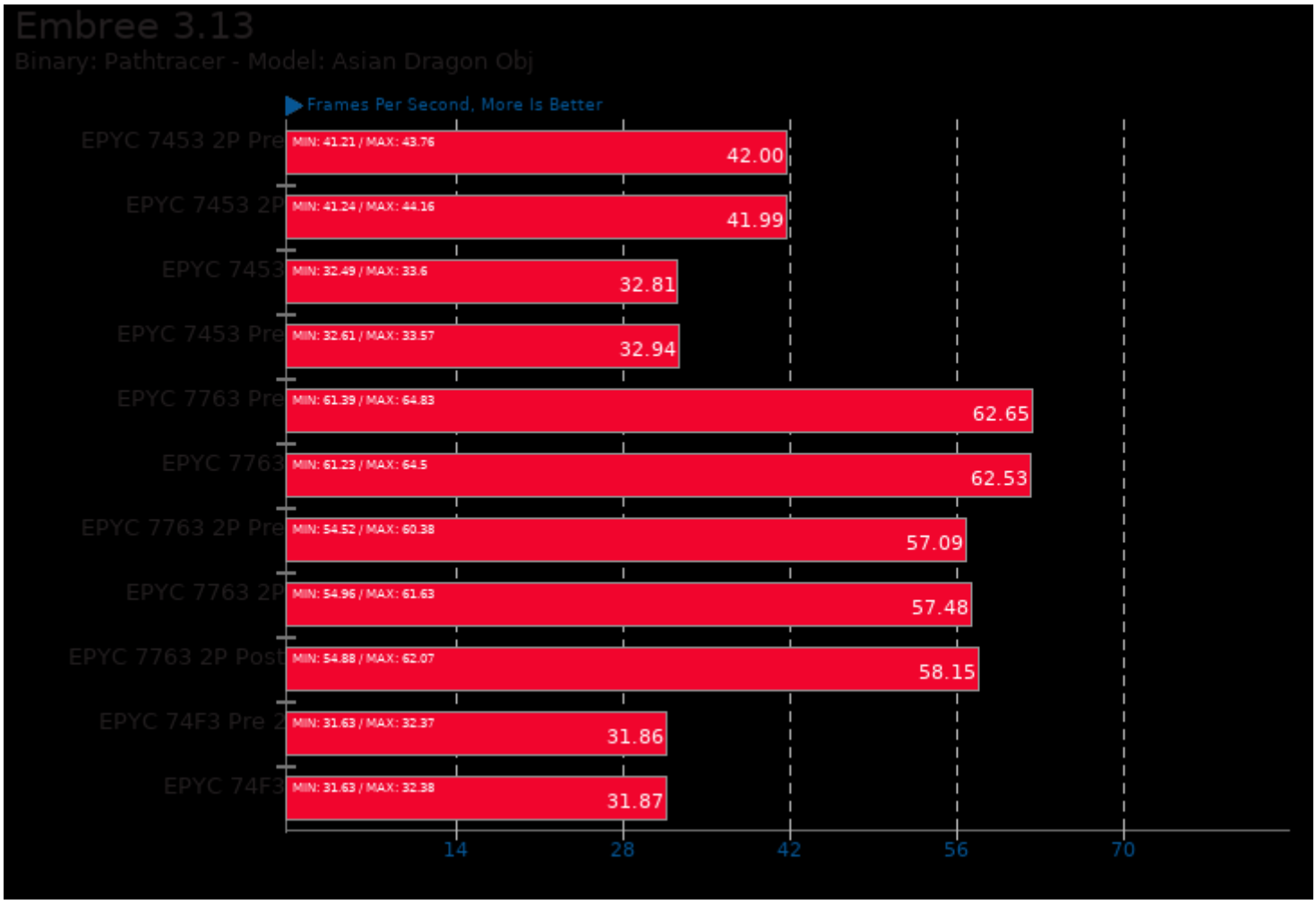
onerun-surplus



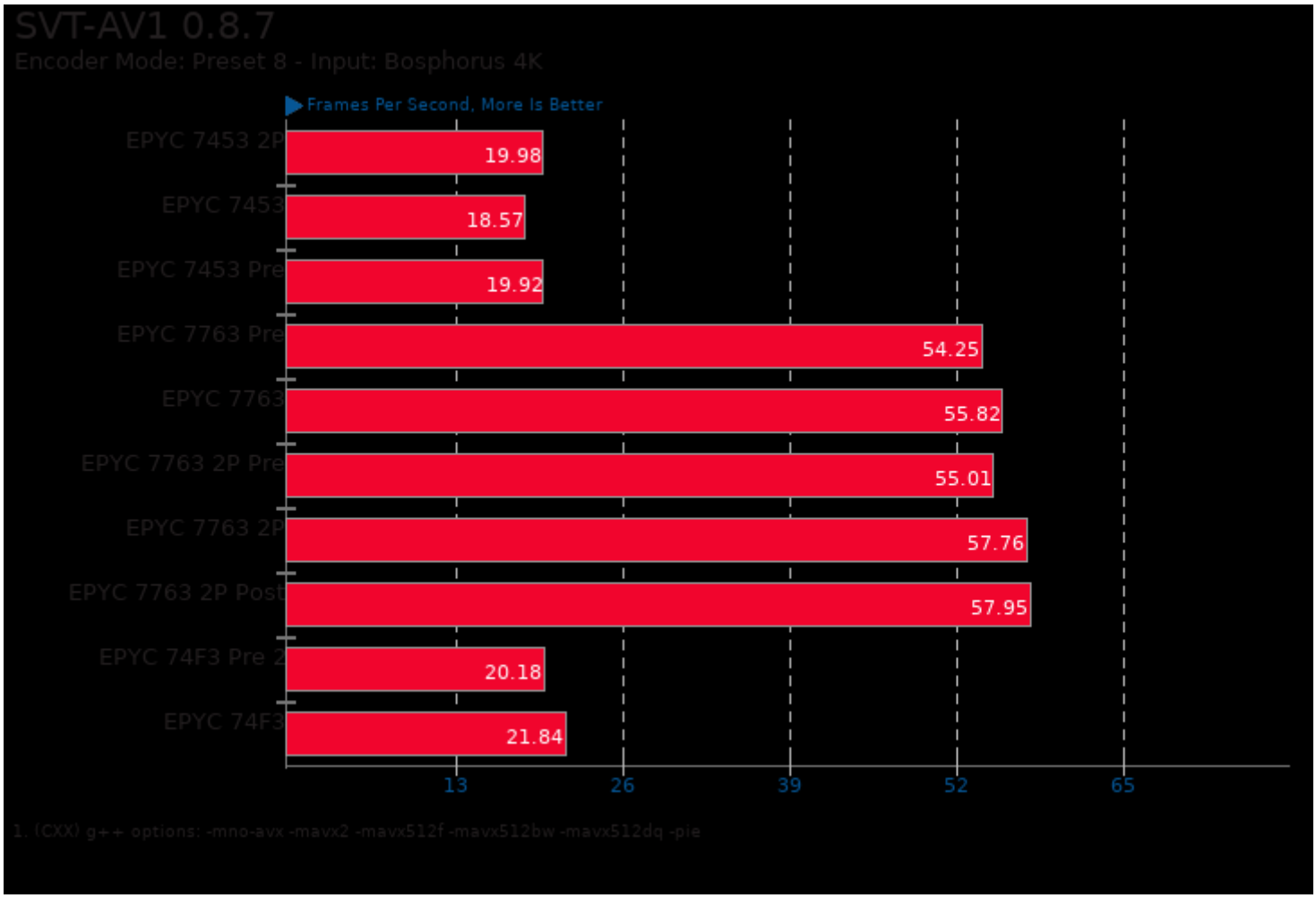
onerun-surplus



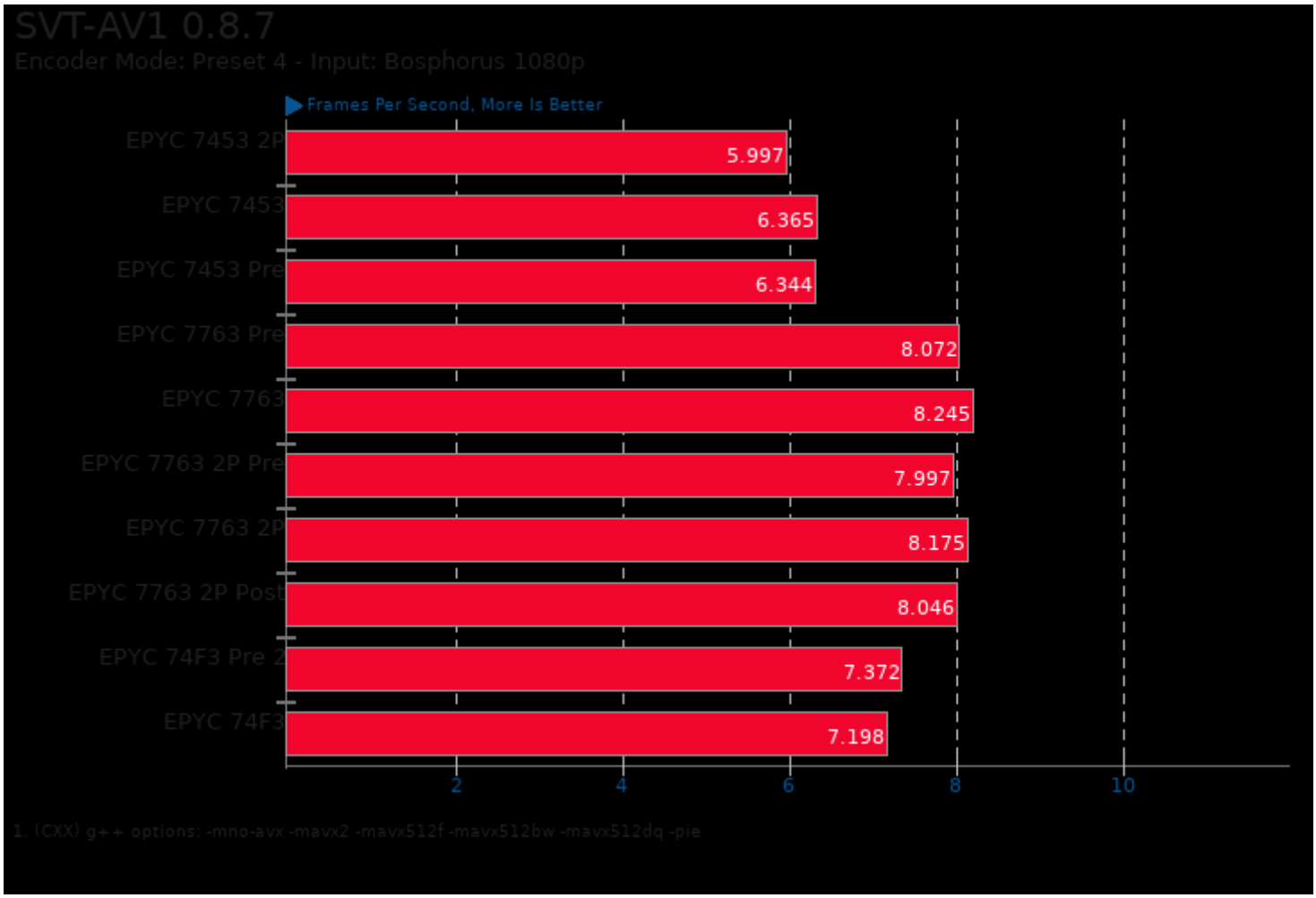
onerun-surplus

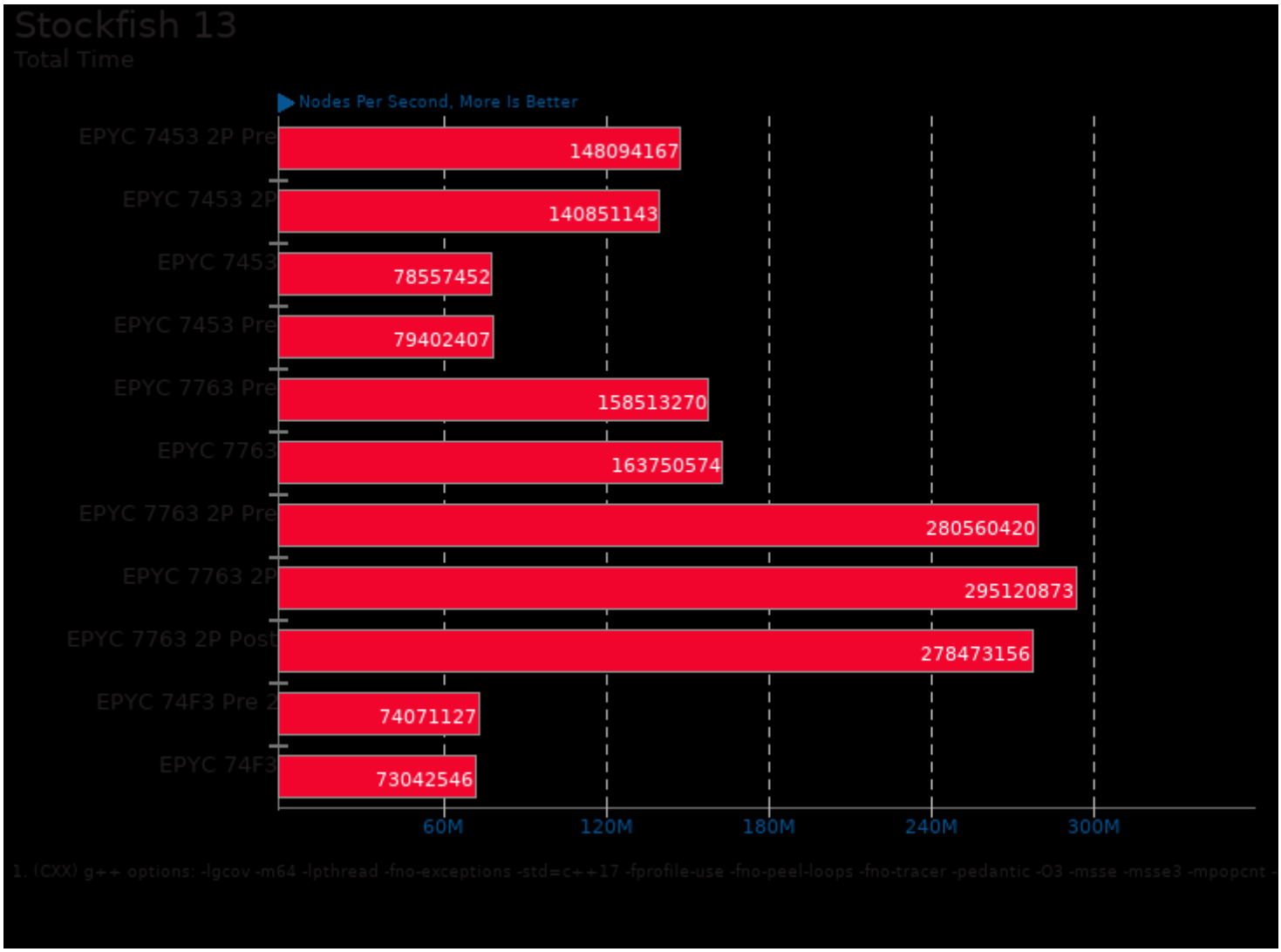


onerun-surplus

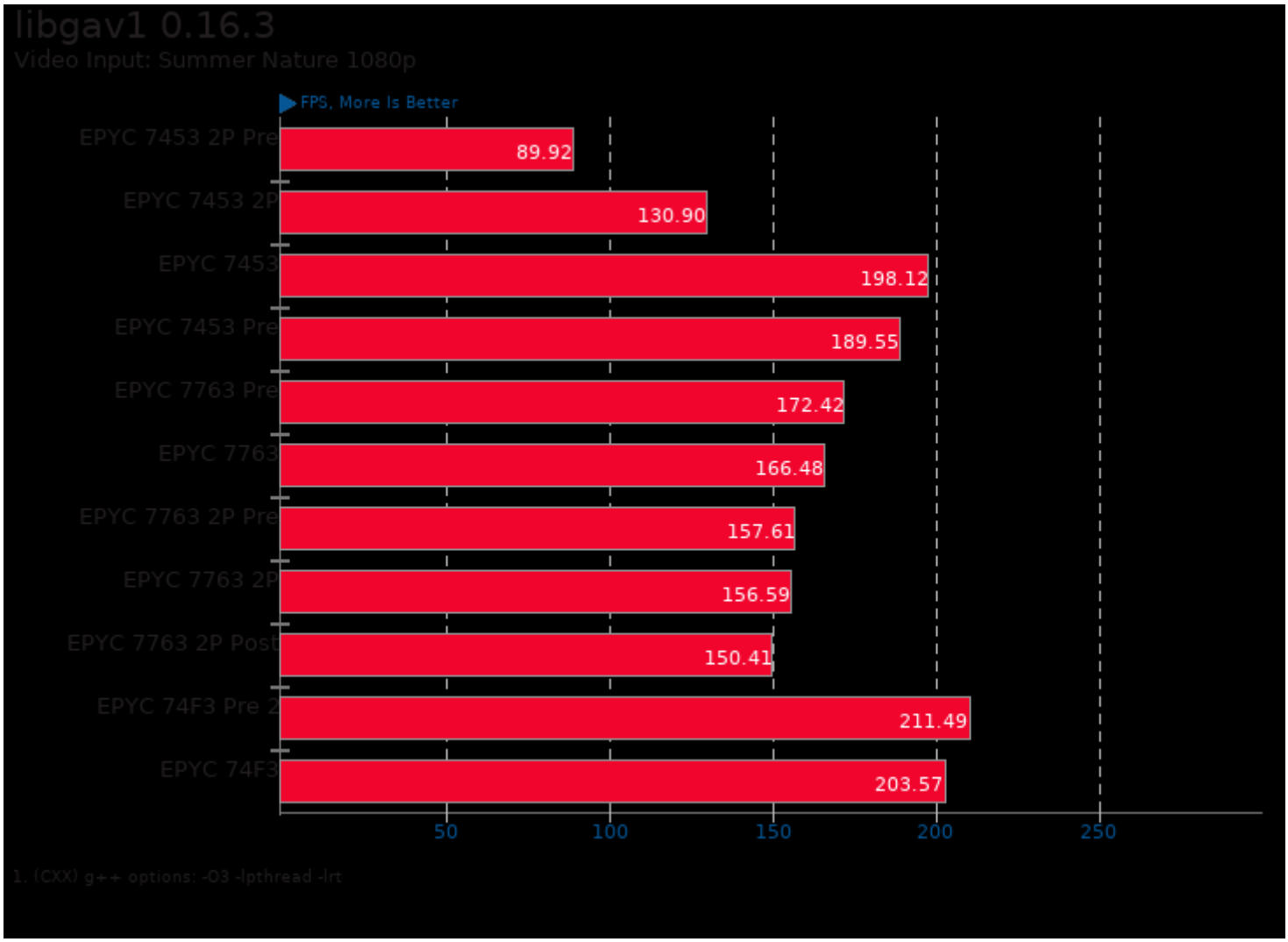


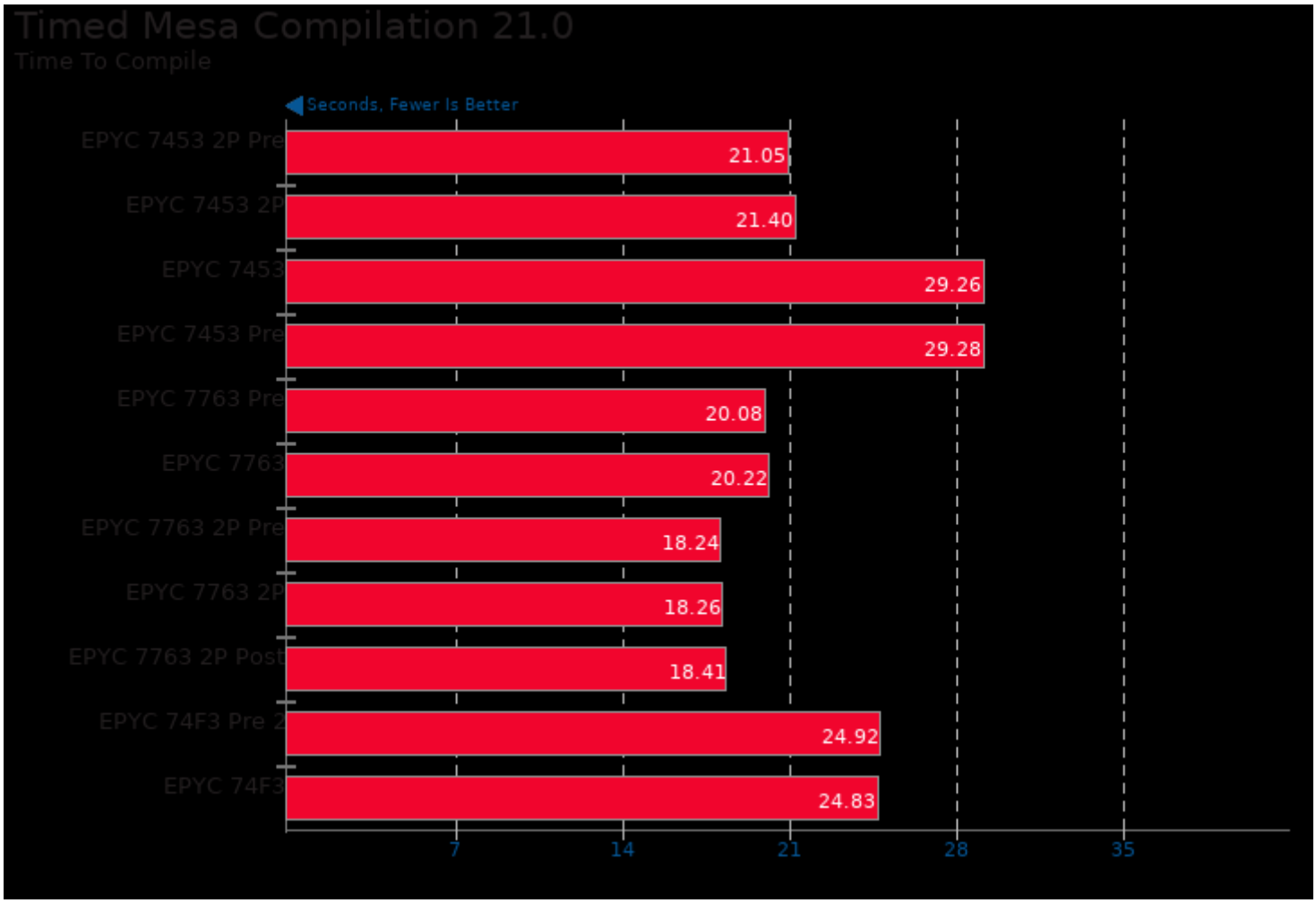
onerun-surplus

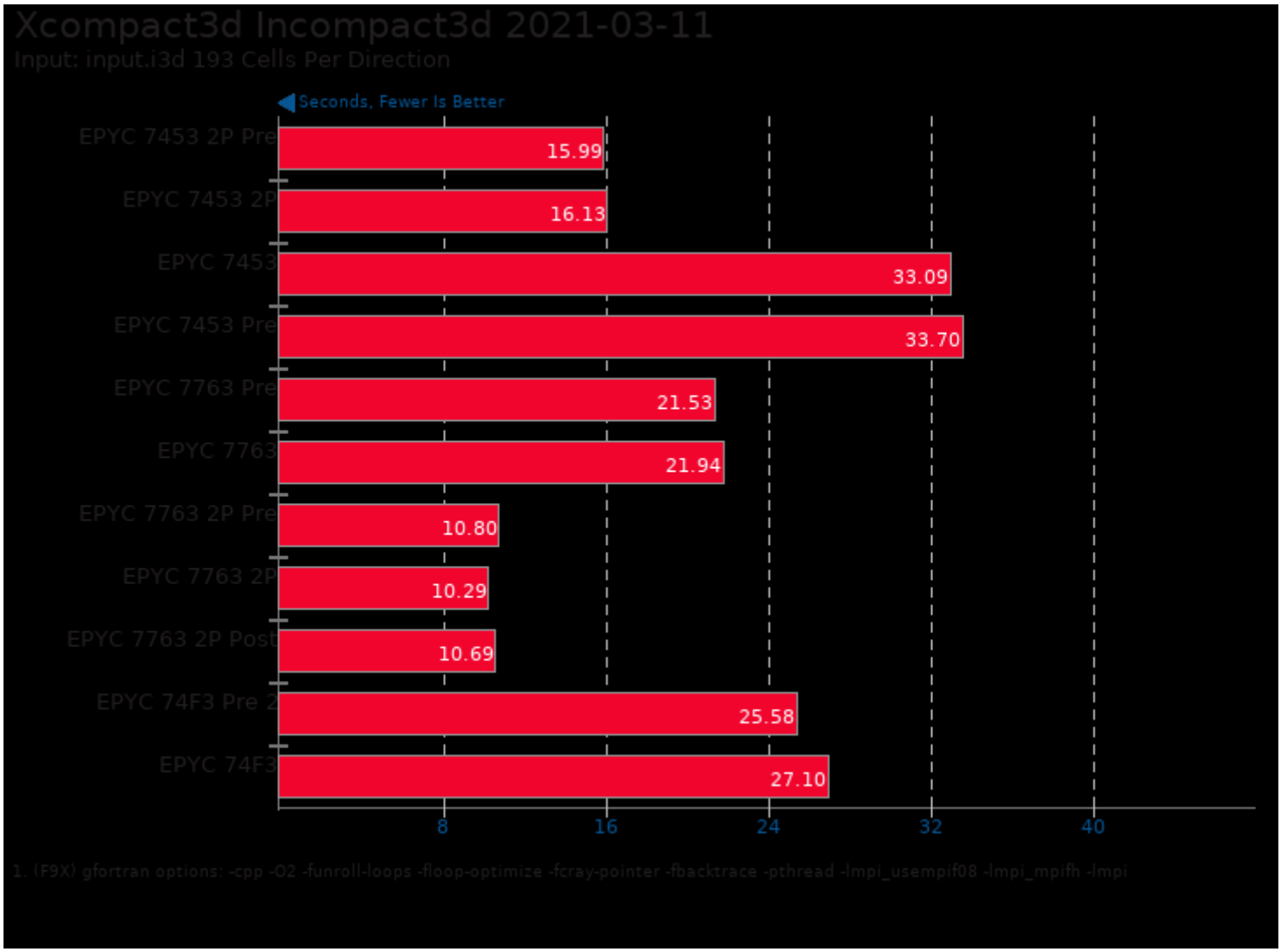



Stockfish 13
Total Time
Nodes Per Second, More Is Better
EPYC 7453 2P Pre
148094167
EPYC 7453 2P
140851143
EPYC 7453
78557452
EPYC 7453 Pre
79402407
EPYC 7763 Pre
158513270
EPYC 7763
163750574
EPYC 7763 2P Pre
280560420
EPYC 7763 2P
295120873
EPYC 7763 2P Post
278473156
EPYC 74F3 Pre 2
74071127
EPYC 74F3
73042546
60M
120M
180M
240M
300M
1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt

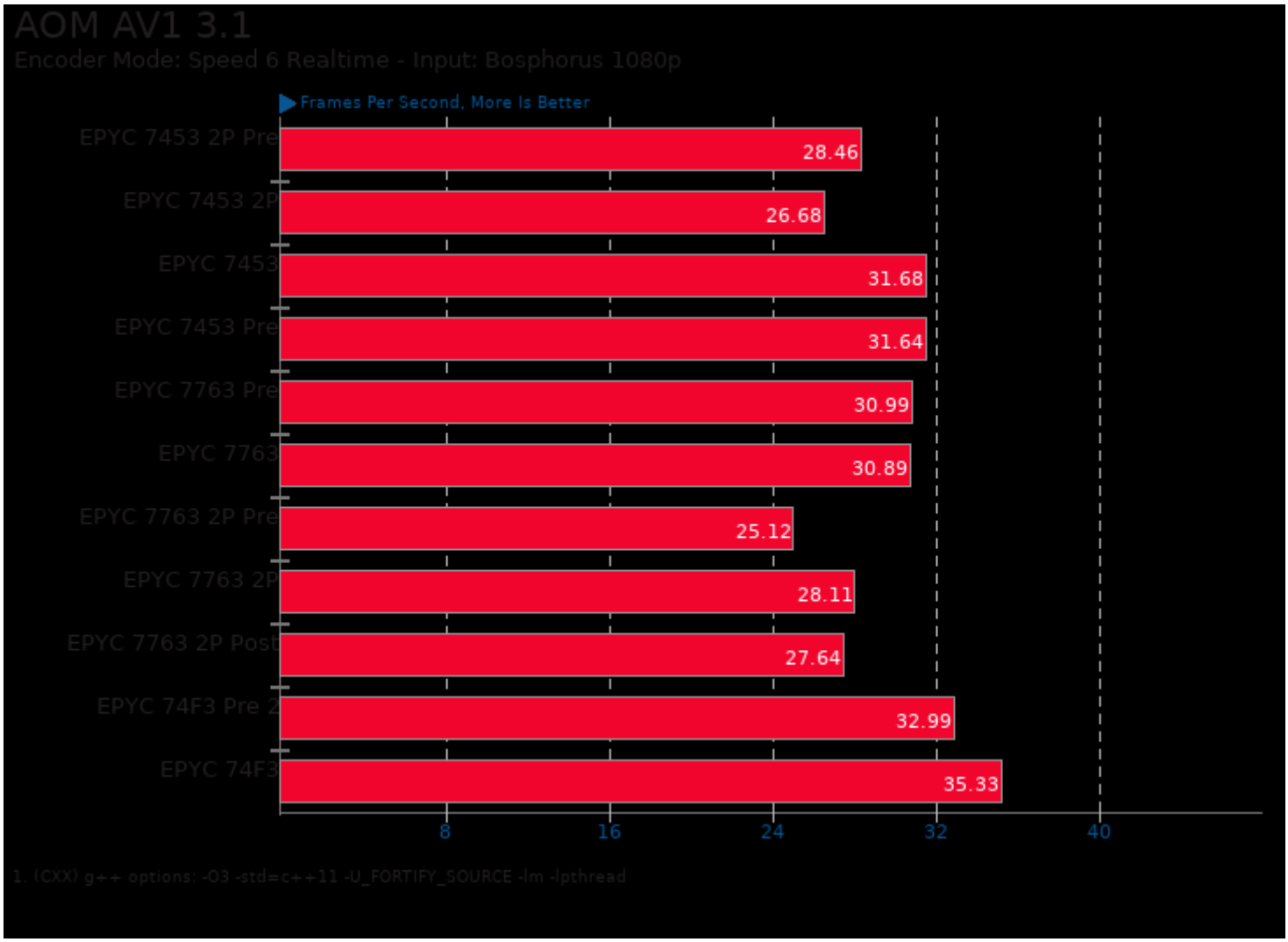
onerun-surplus

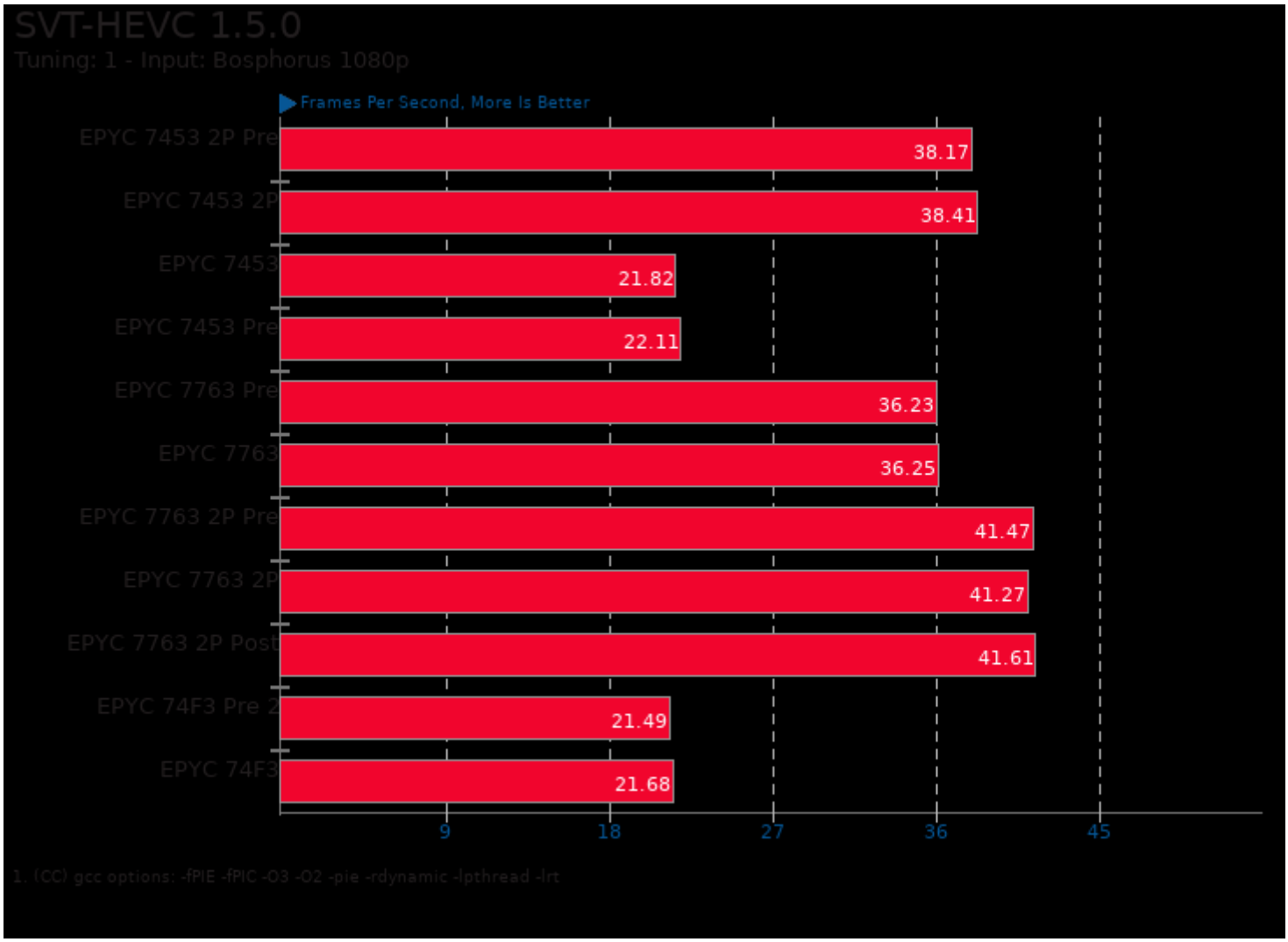



Timed Mesa Compilation 21.0
Time To Compile
Seconds, Fewer Is Better
EPYC 7453 2P Pre
EPYC 7453 2P
EPYC 7453
EPYC 7453 Pre
EPYC 7763 Pre
EPYC 7763
EPYC 7763 2P Pre
EPYC 7763 2P
EPYC 7763 2P Post
EPYC 74F3 Pre 2
EPYC 74F3
21.05
21.40
29.26
29.28
20.08
20.22
18.24
18.26
18.41
24.92
24.83
7
14
21
28
35

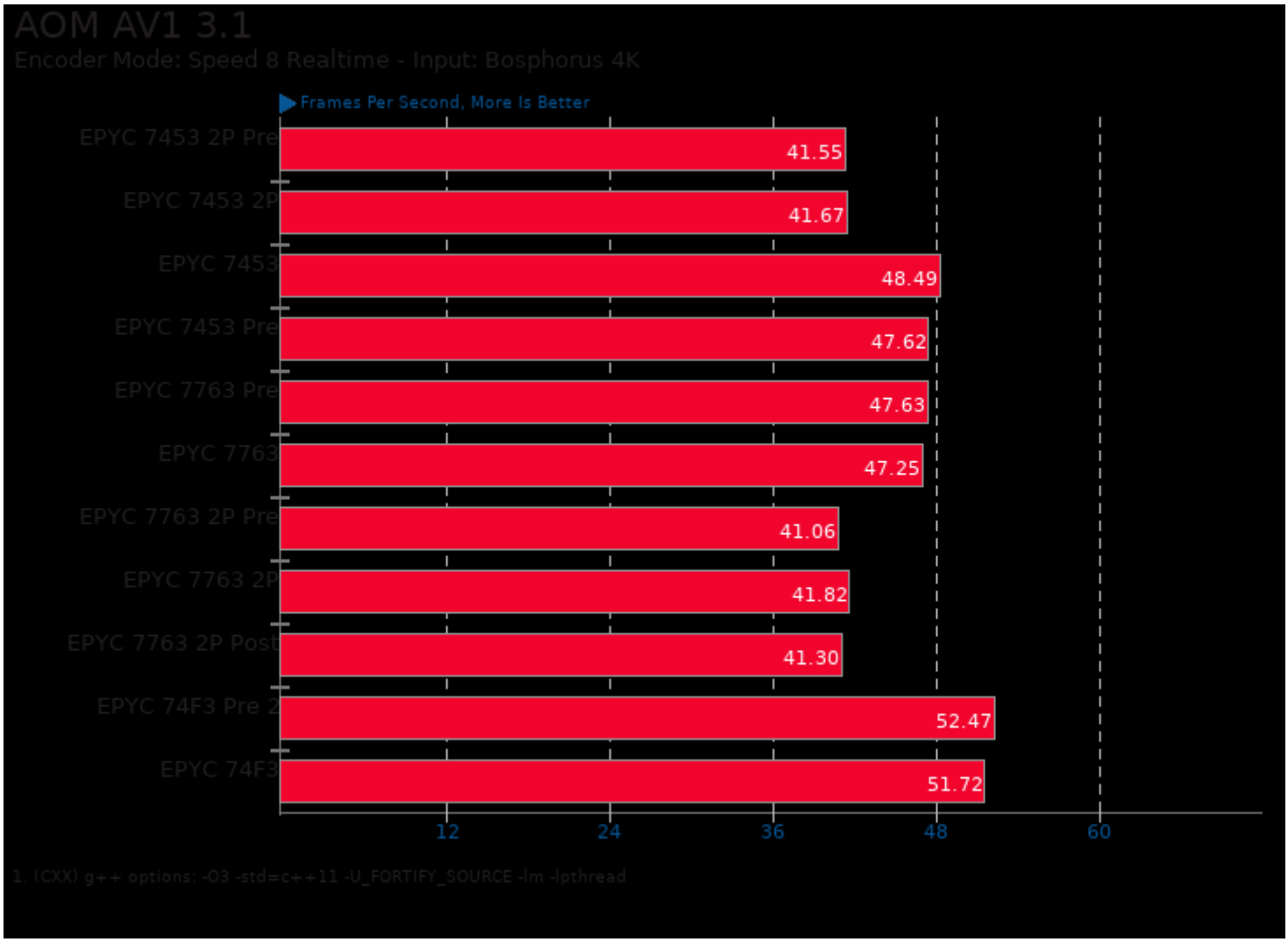

Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 193 Cells Per Direction
Seconds, Fewer Is Better
EPYC 7453 2P Pre
EPYC 7453 2P
EPYC 7453
EPYC 7453 Pre
EPYC 7763 Pre
EPYC 7763
EPYC 7763 2P Pre
EPYC 7763 2P
EPYC 7763 2P Post
EPYC 74F3 Pre 2
EPYC 74F3
15.99
16.13
33.09
33.70
21.53
21.94
10.80
10.29
10.69
25.58
27.10
8
16
24
32
40
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

onerun-surplus

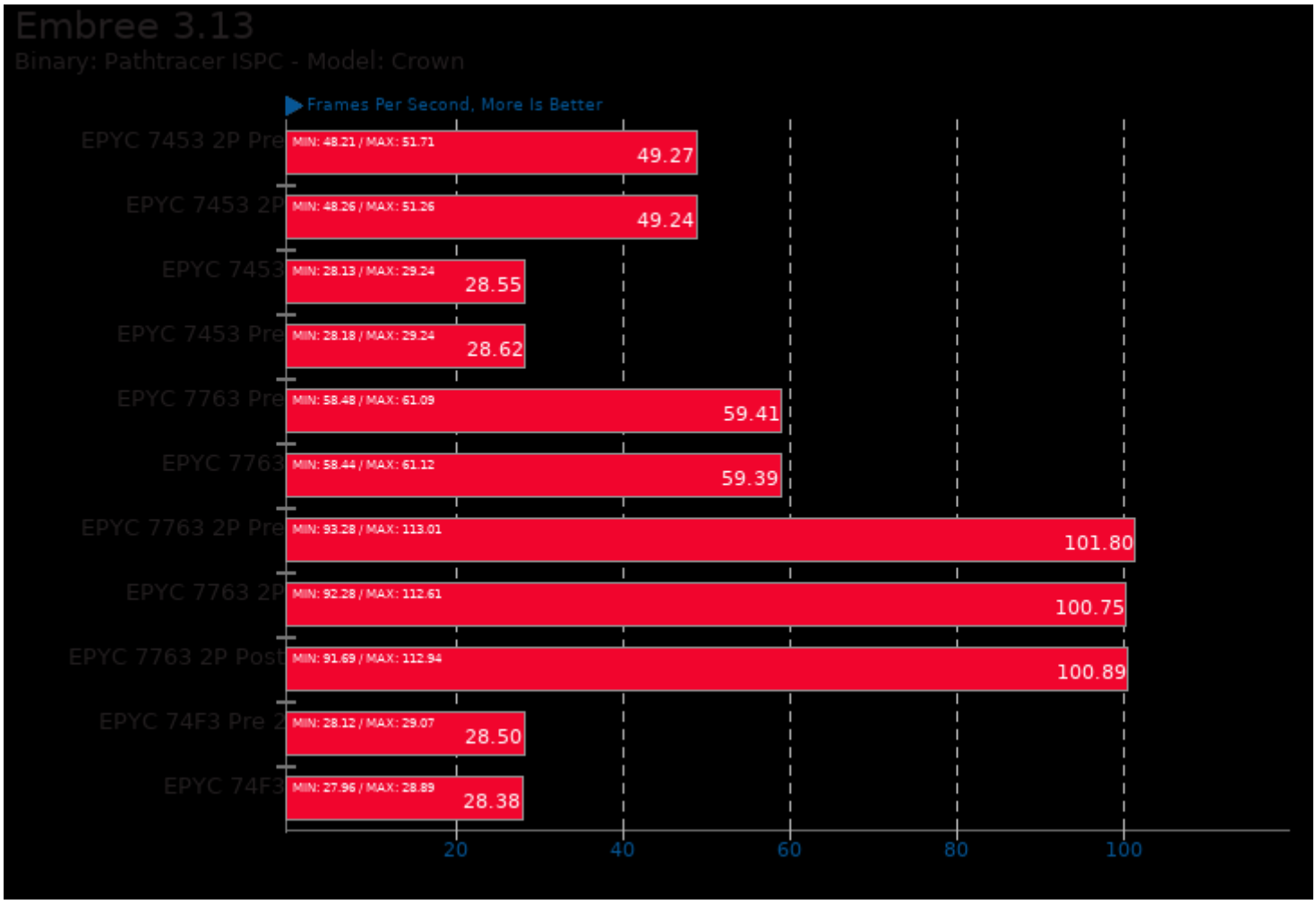



SVT-HEVC 1.5.0
Tuning: 1 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
EPYC 7453 2P Pre
EPYC 7453 2P
EPYC 7453
EPYC 7453 Pre
EPYC 7763 Pre
EPYC 7763
EPYC 7763 2P Pre
EPYC 7763 2P
EPYC 7763 2P Post
EPYC 74F3 Pre 2
EPYC 74F3
38.17
38.41
21.82
22.11
36.23
36.25
41.47
41.27
41.61
21.49
21.68
9
18
27
36
45
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

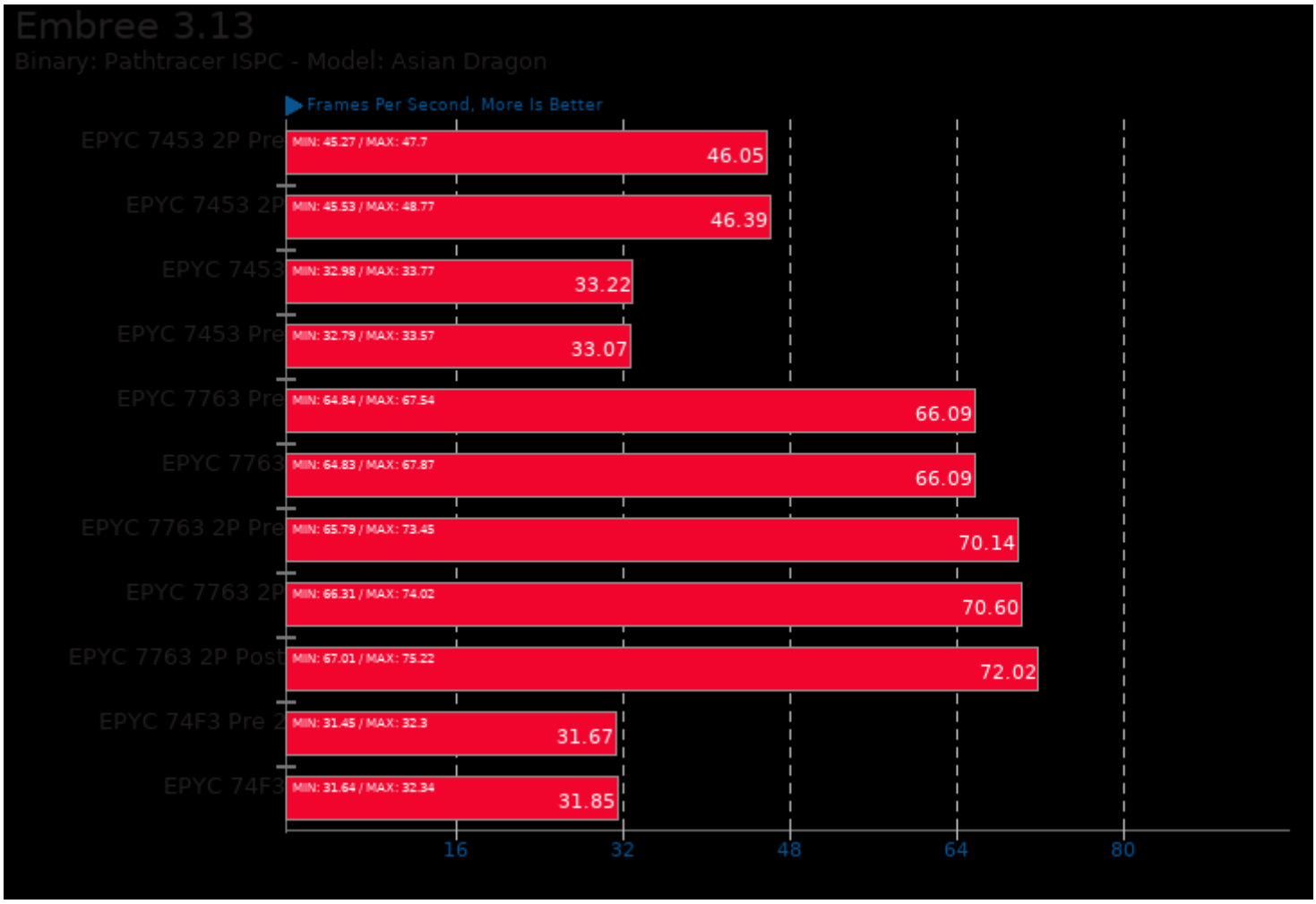
onerun-surplus



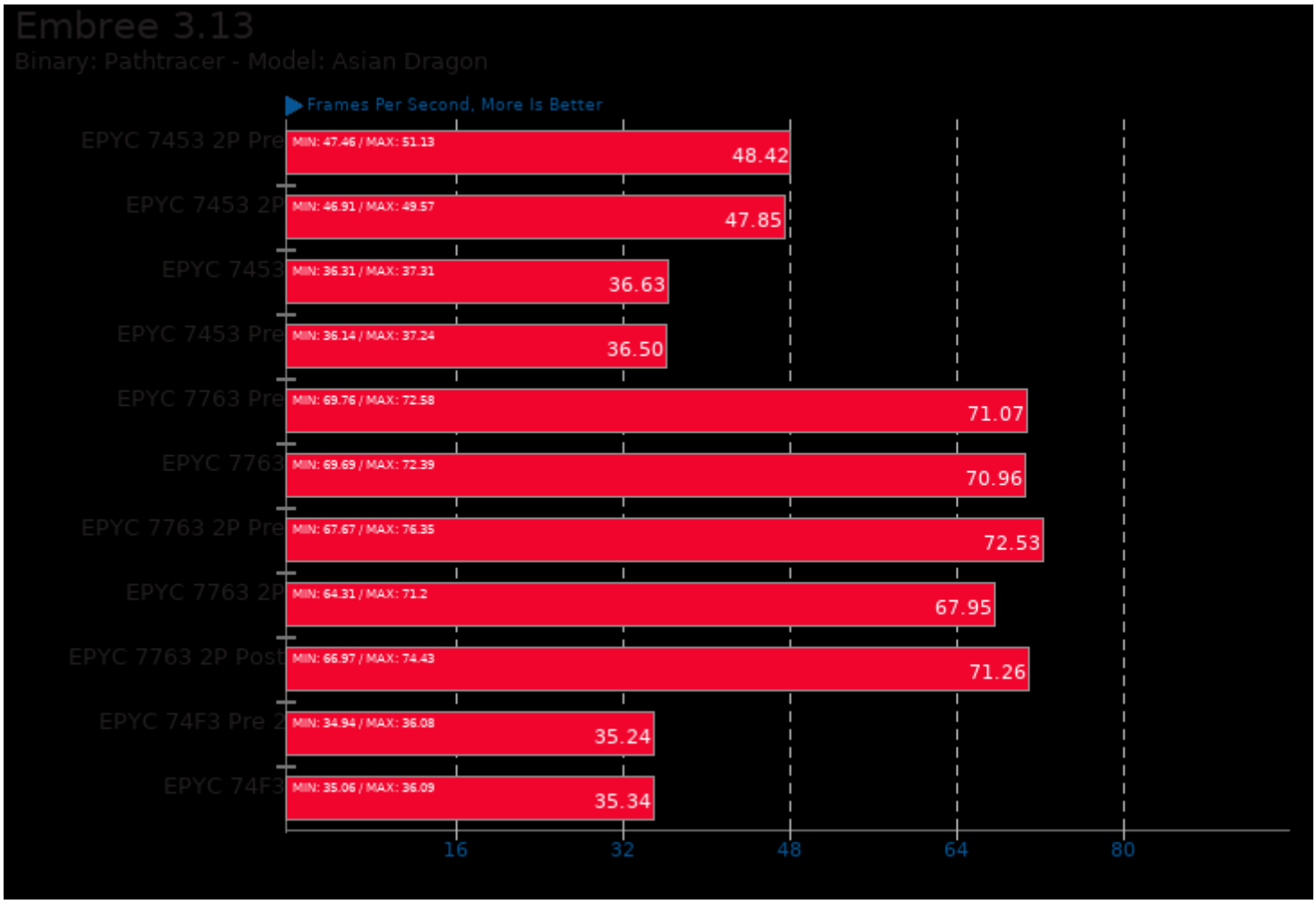
onerun-surplus



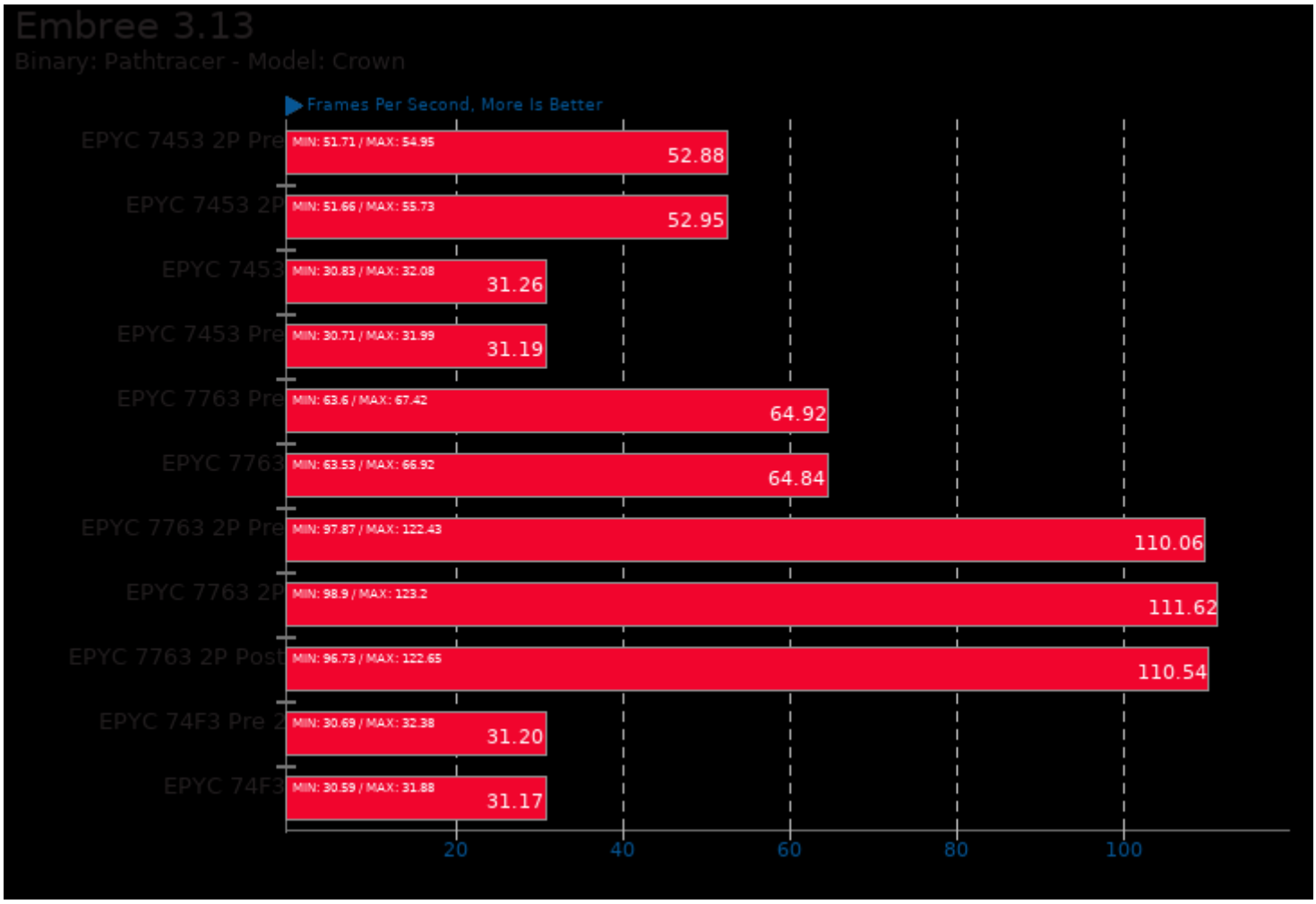
onerun-surplus

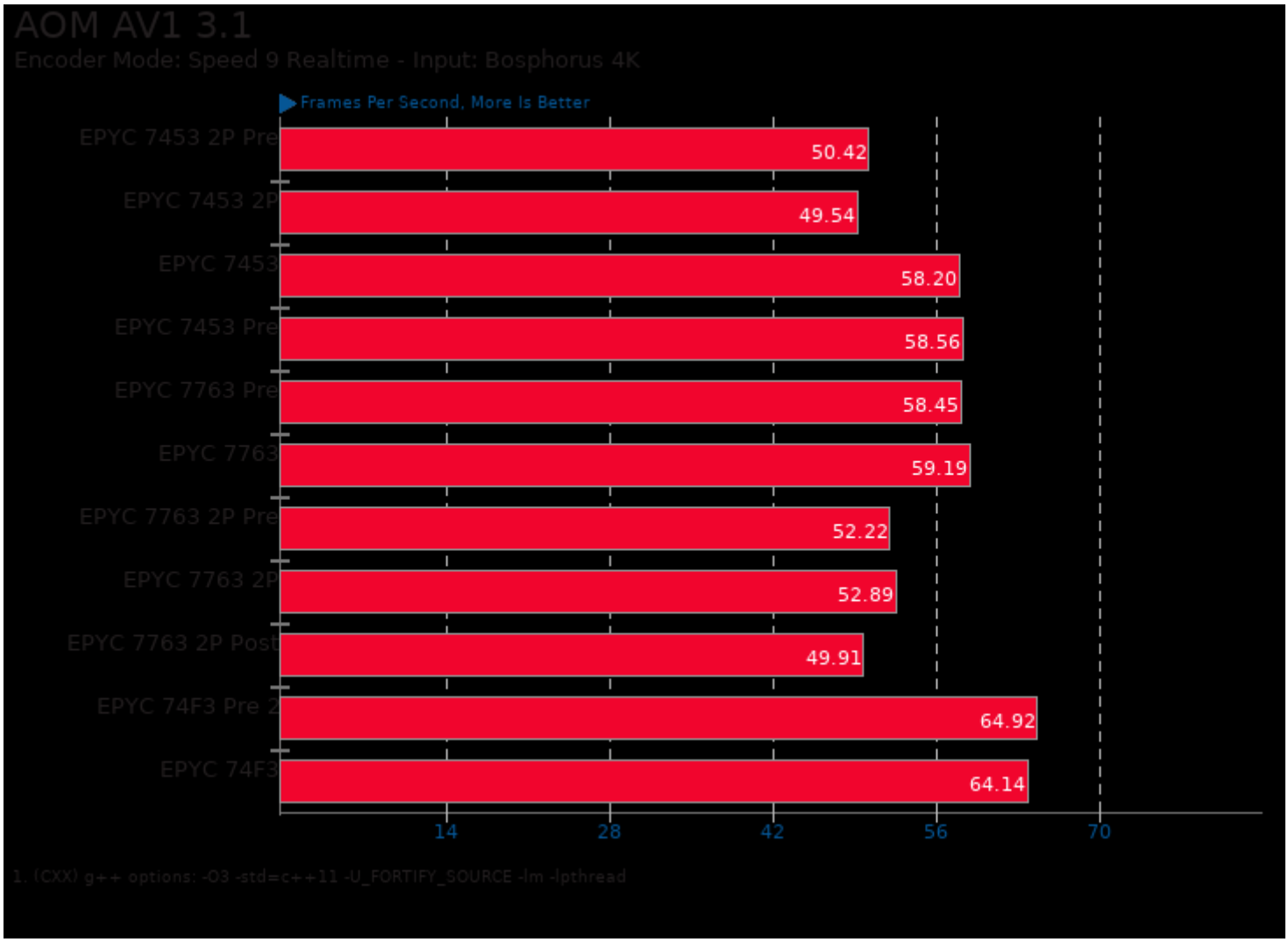


onerun-surplus

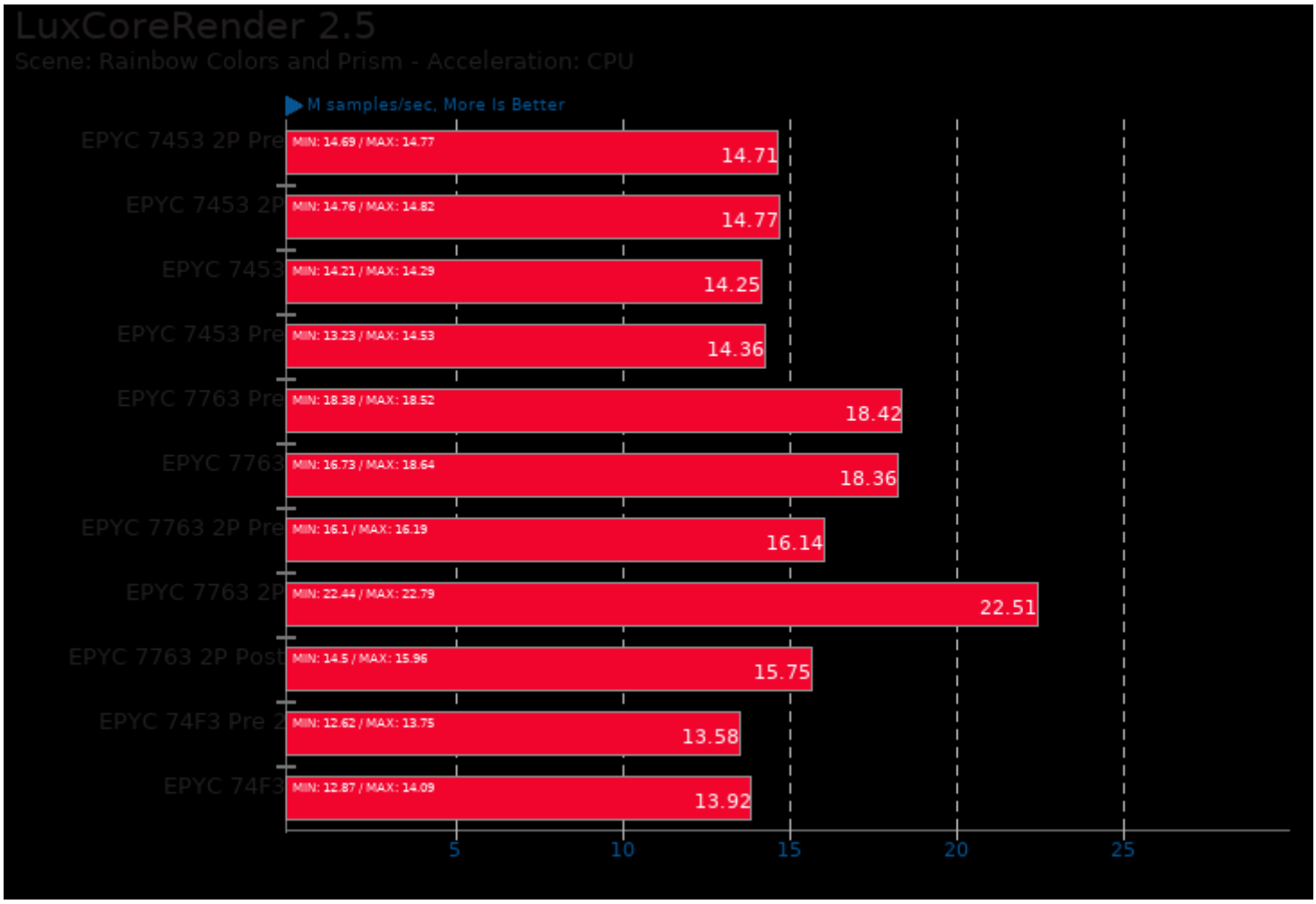


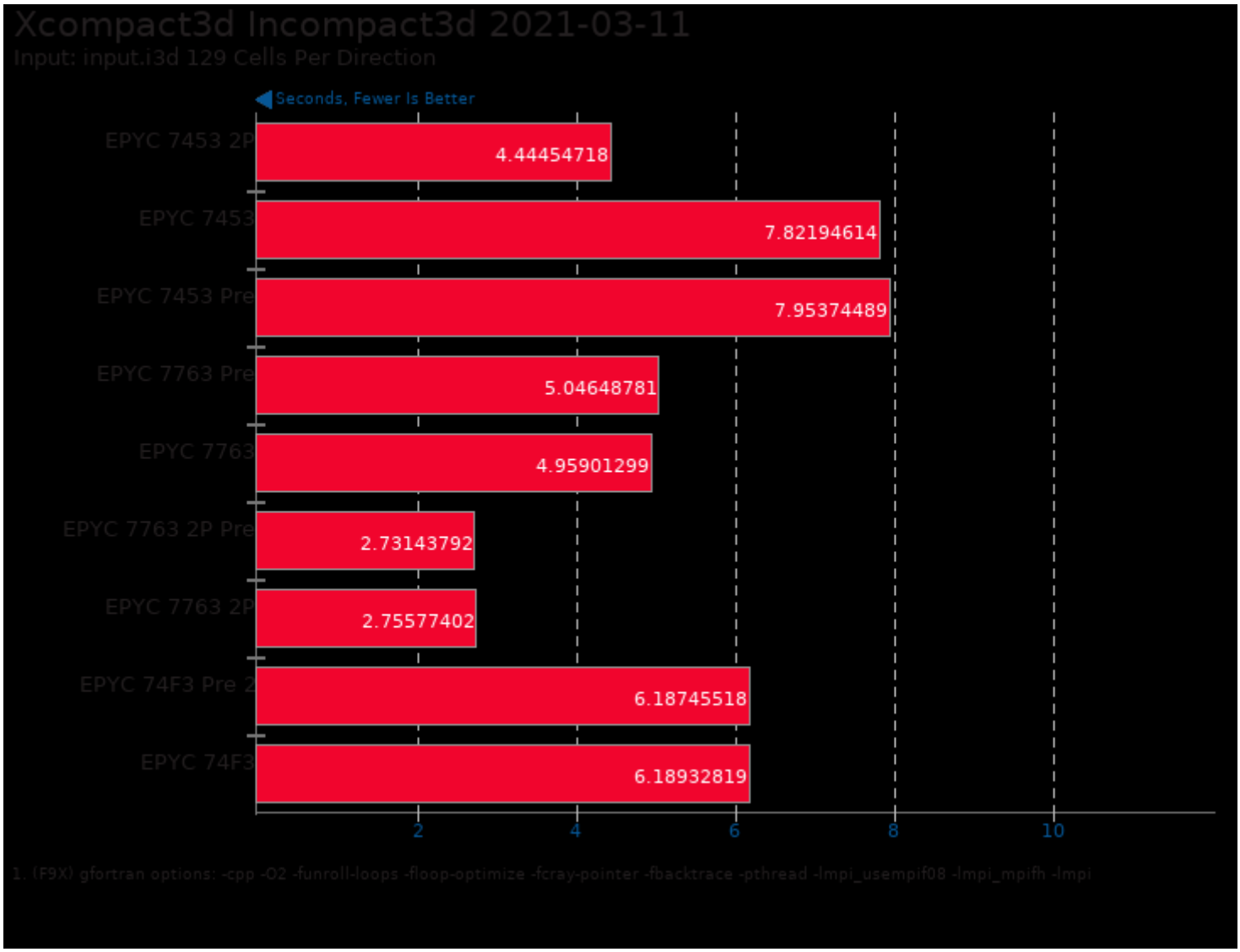
onerun-surplus



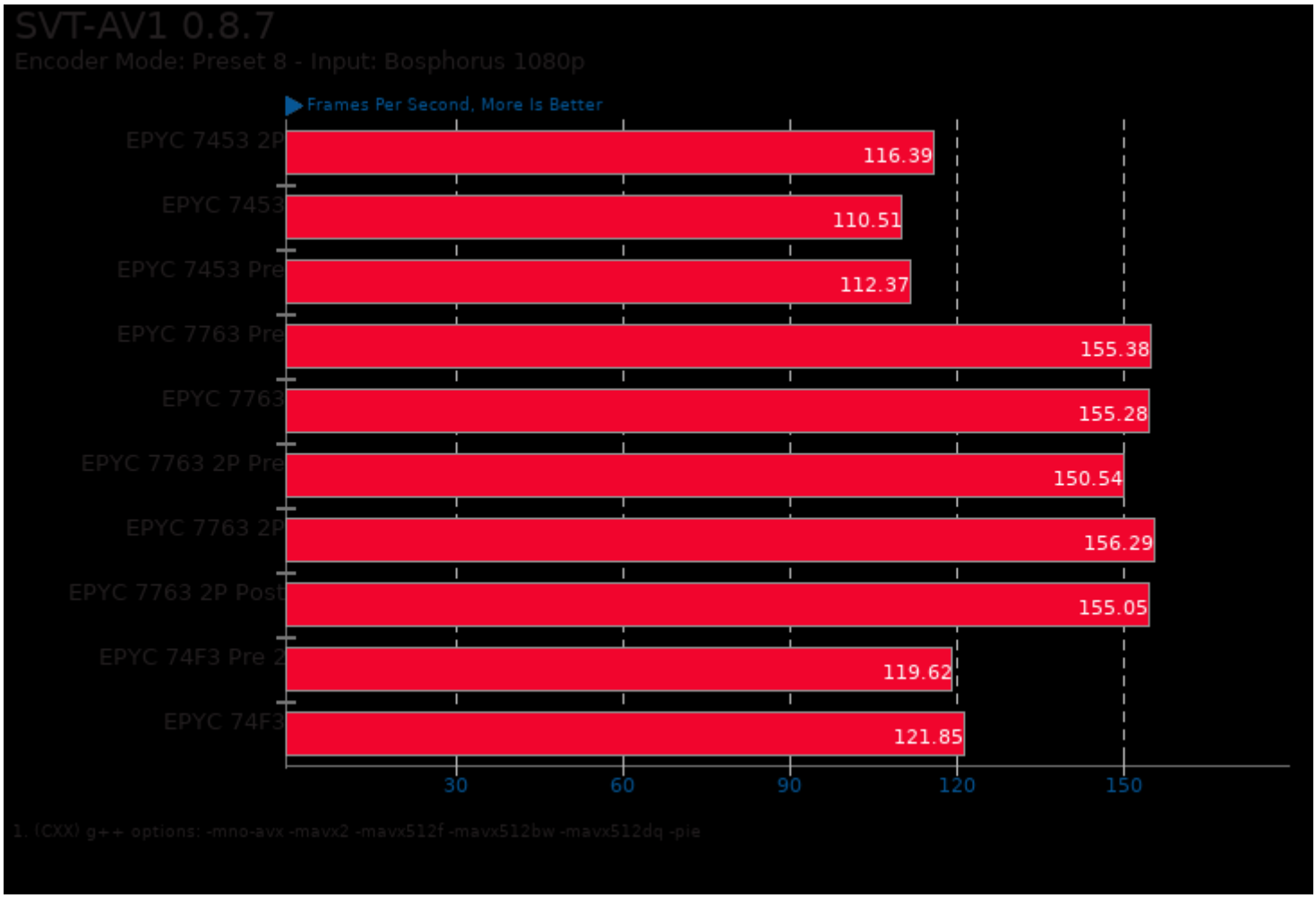

AOM AV1 3.1
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
EPYC 7453 2P Pre
50.42
EPYC 7453 2P
49.54
EPYC 7453
58.20
EPYC 7453 Pre
58.56
EPYC 7763 Pre
58.45
EPYC 7763
59.19
EPYC 7763 2P Pre
52.22
EPYC 7763 2P
52.89
EPYC 7763 2P Post
49.91
EPYC 74F3 Pre 2
64.92
EPYC 74F3
64.14
14
28
42
56
70
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

onerun-surplus

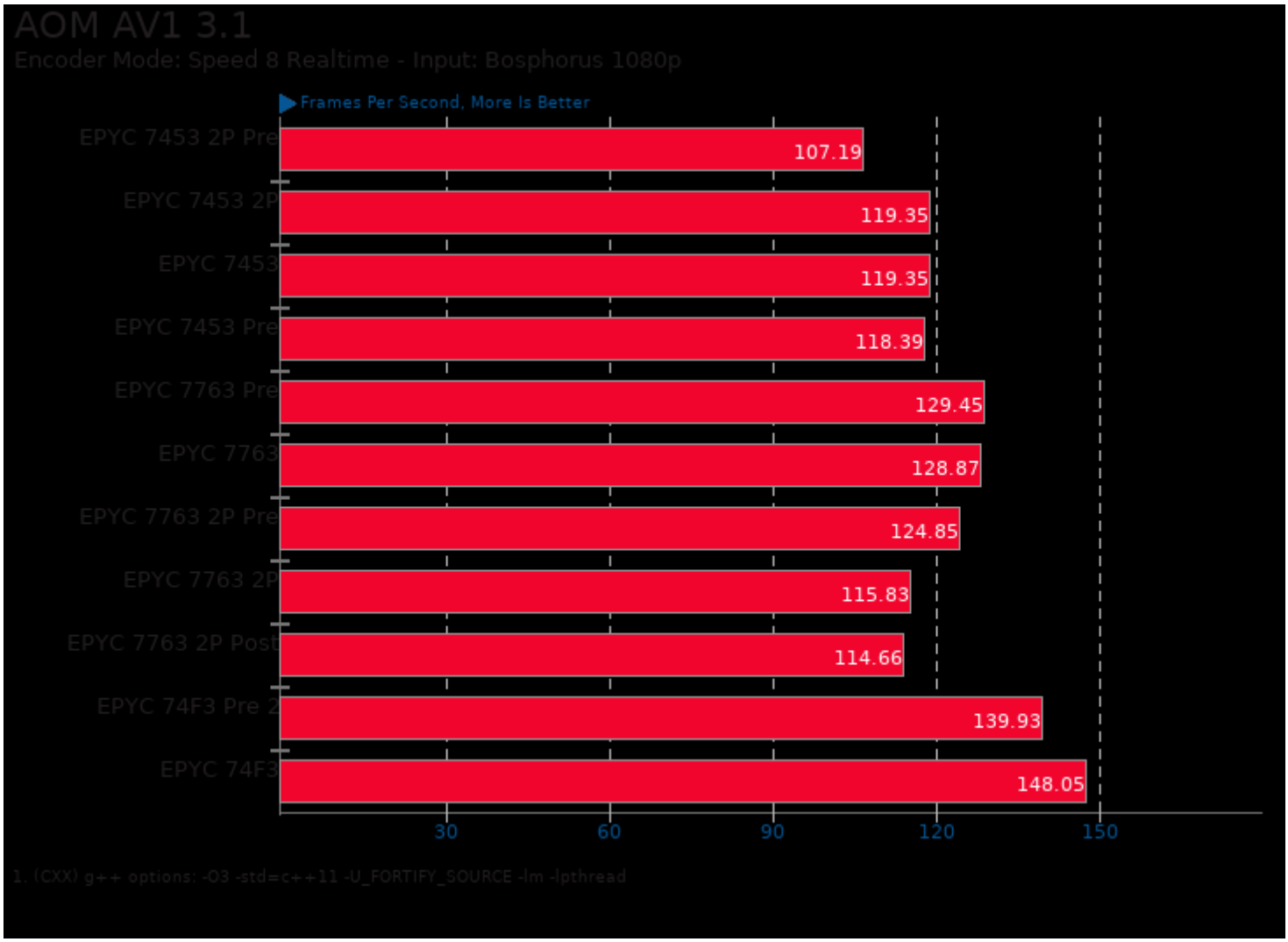



Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 129 Cells Per Direction
Seconds, Fewer Is Better
EPYC 7453 2P
4.44454718
EPYC 7453
7.82194614
EPYC 7453 Pre
7.95374489
EPYC 7763 Pre
5.04648781
EPYC 7763
4.95901299
EPYC 7763 2P Pre
2.73143792
EPYC 7763 2P
2.75577402
EPYC 74F3 Pre 2
6.18745518
EPYC 74F3
6.18932819
2
4
6
8
10
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

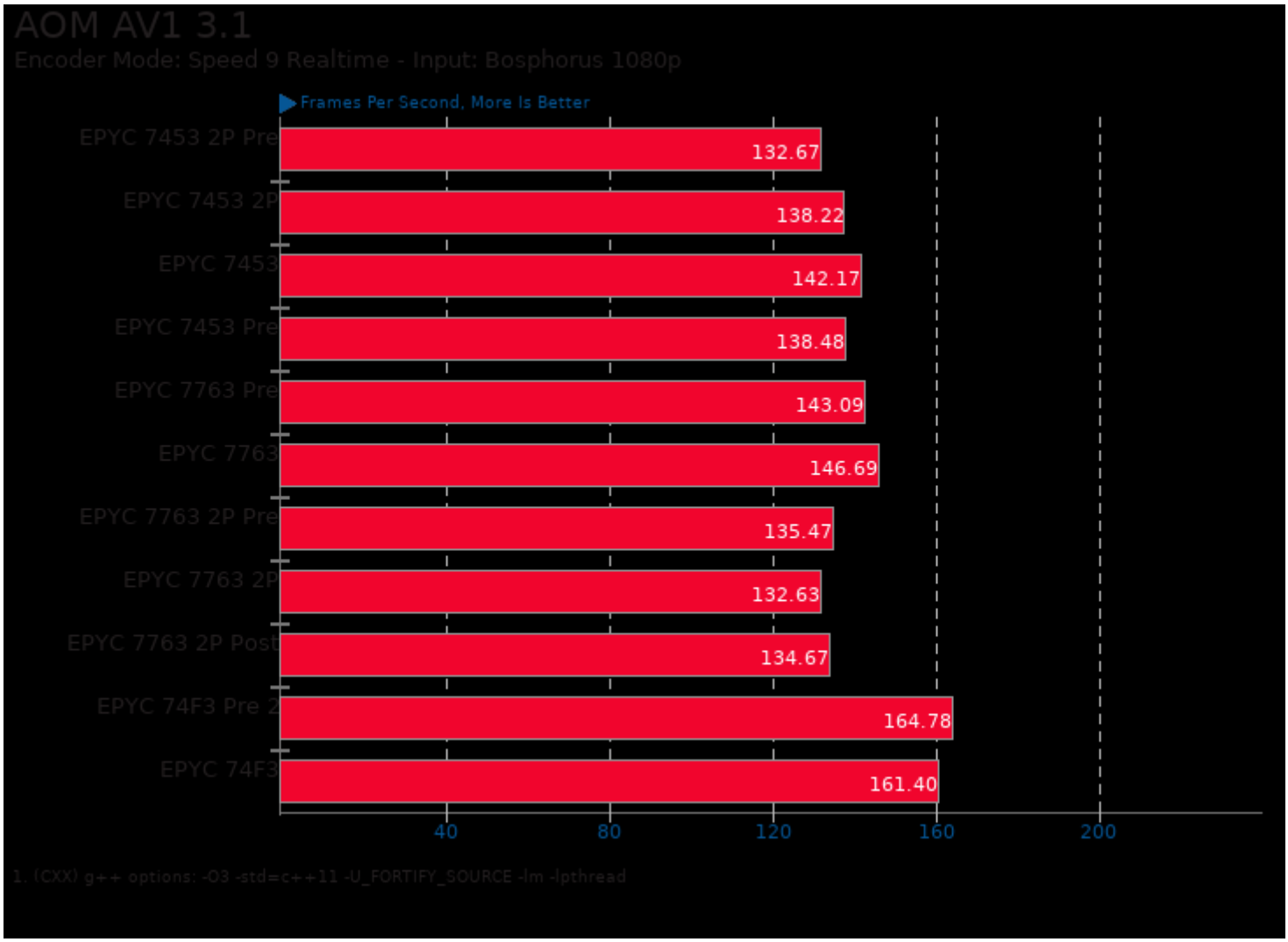
onerun-surplus



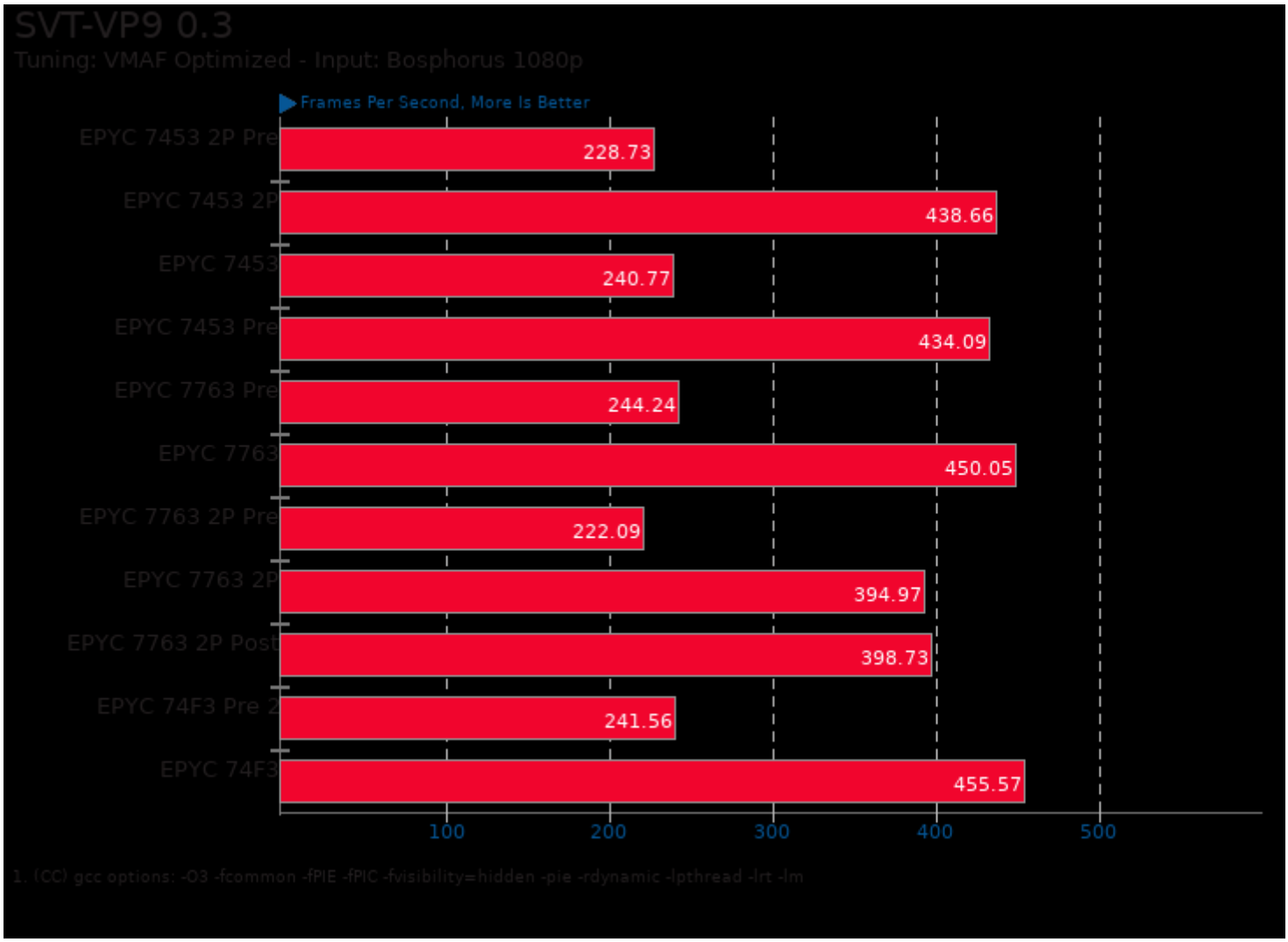
onerun-surplus



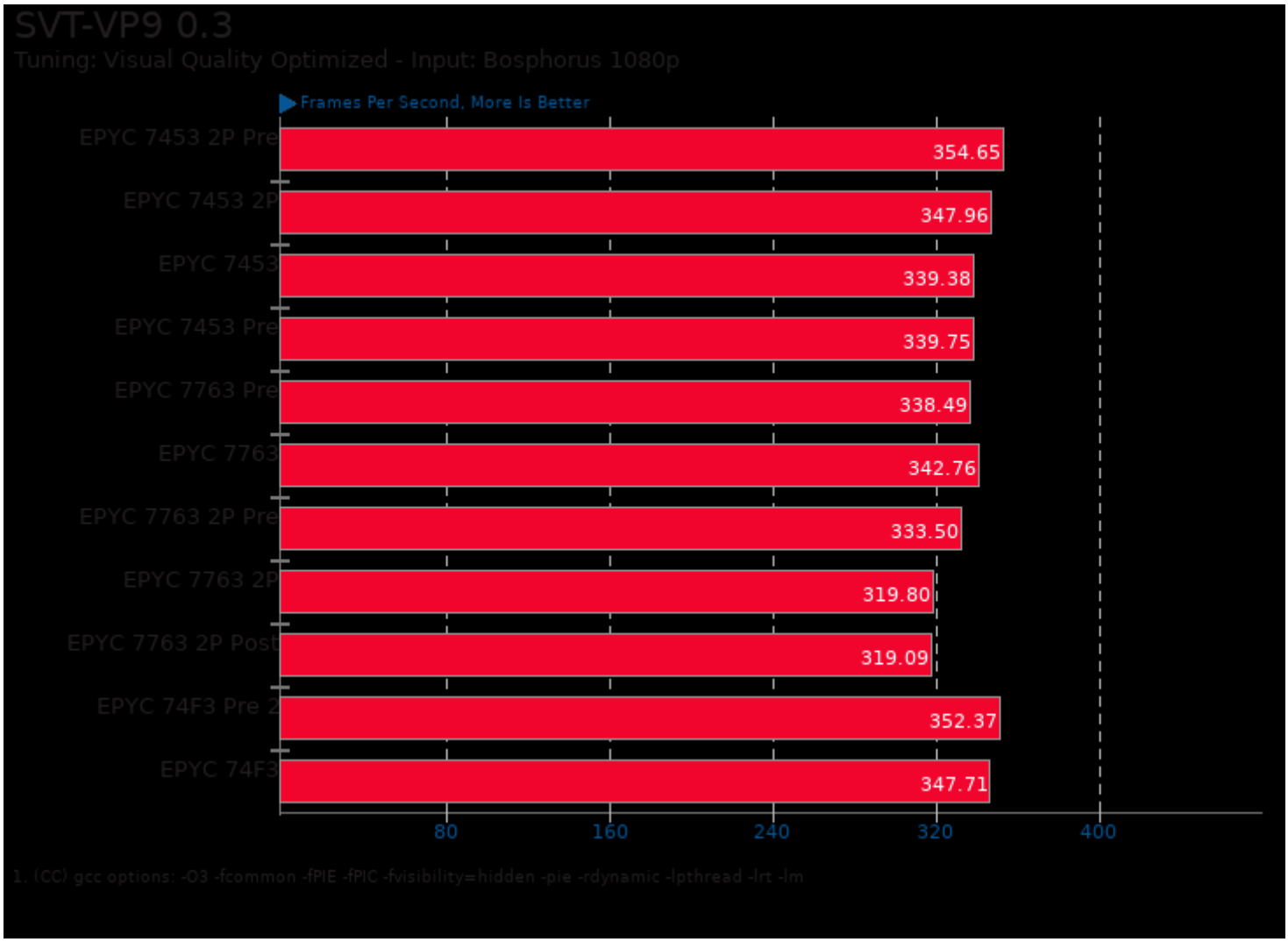
onerun-surplus



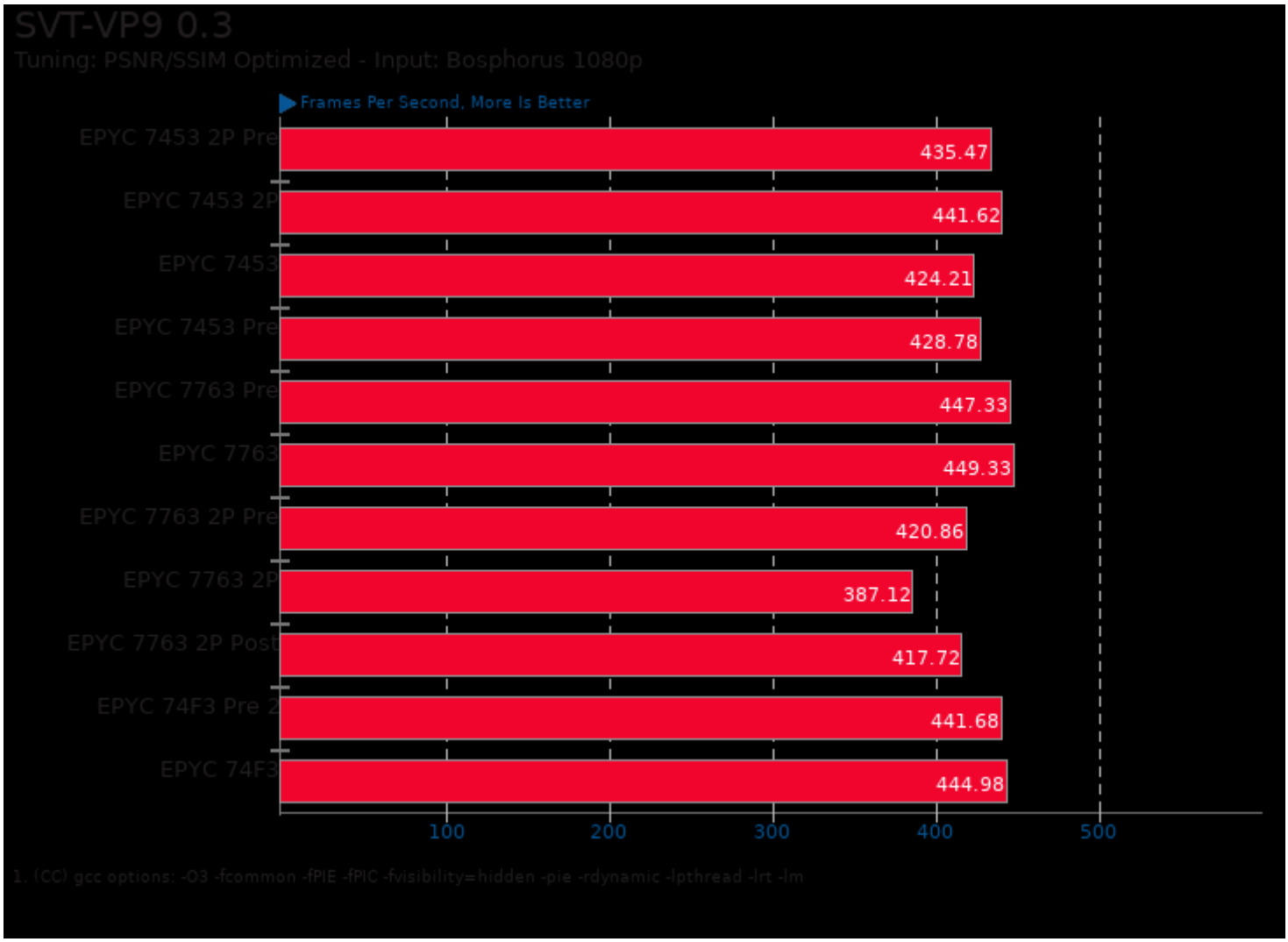
onerun-surplus

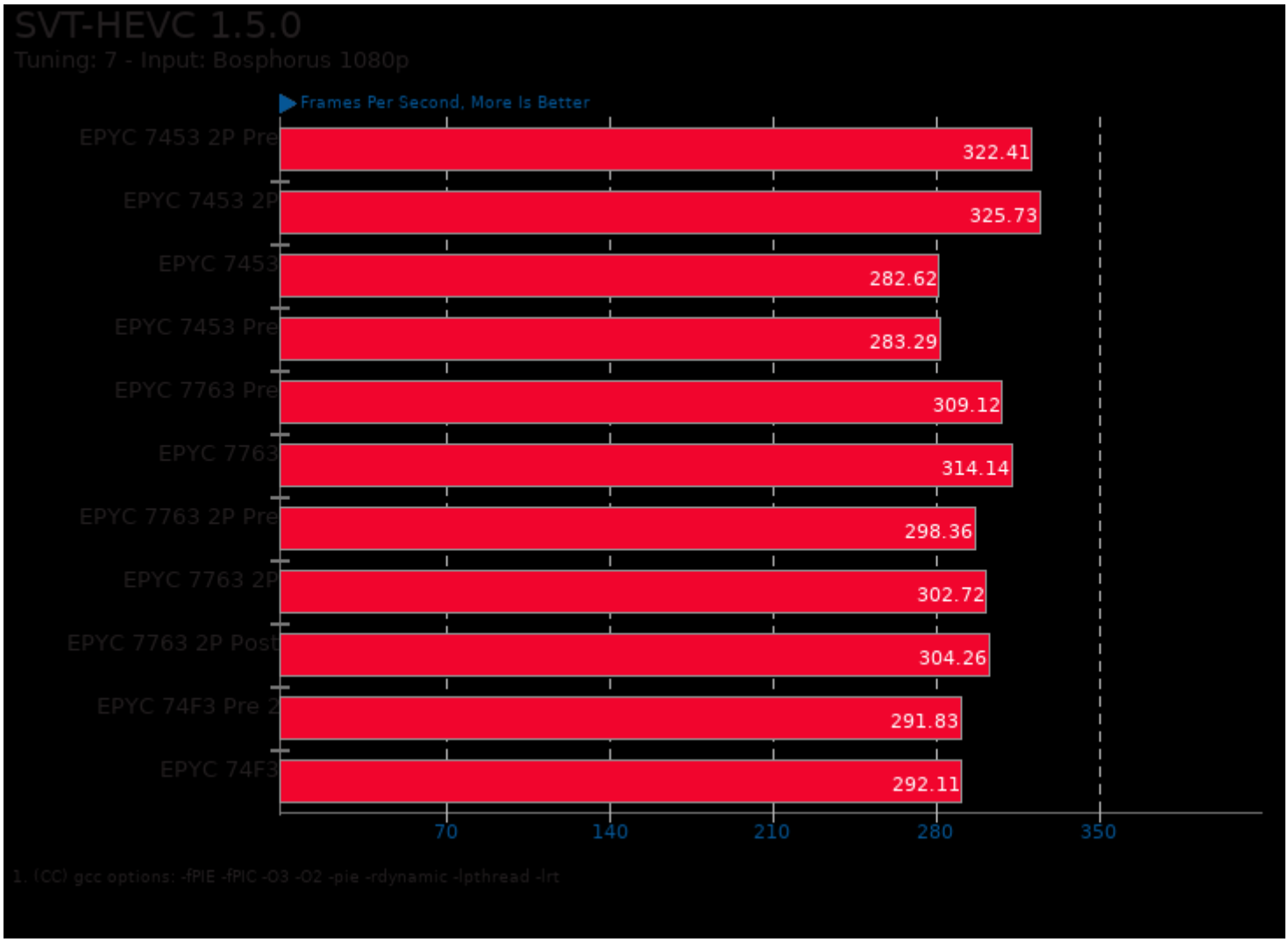


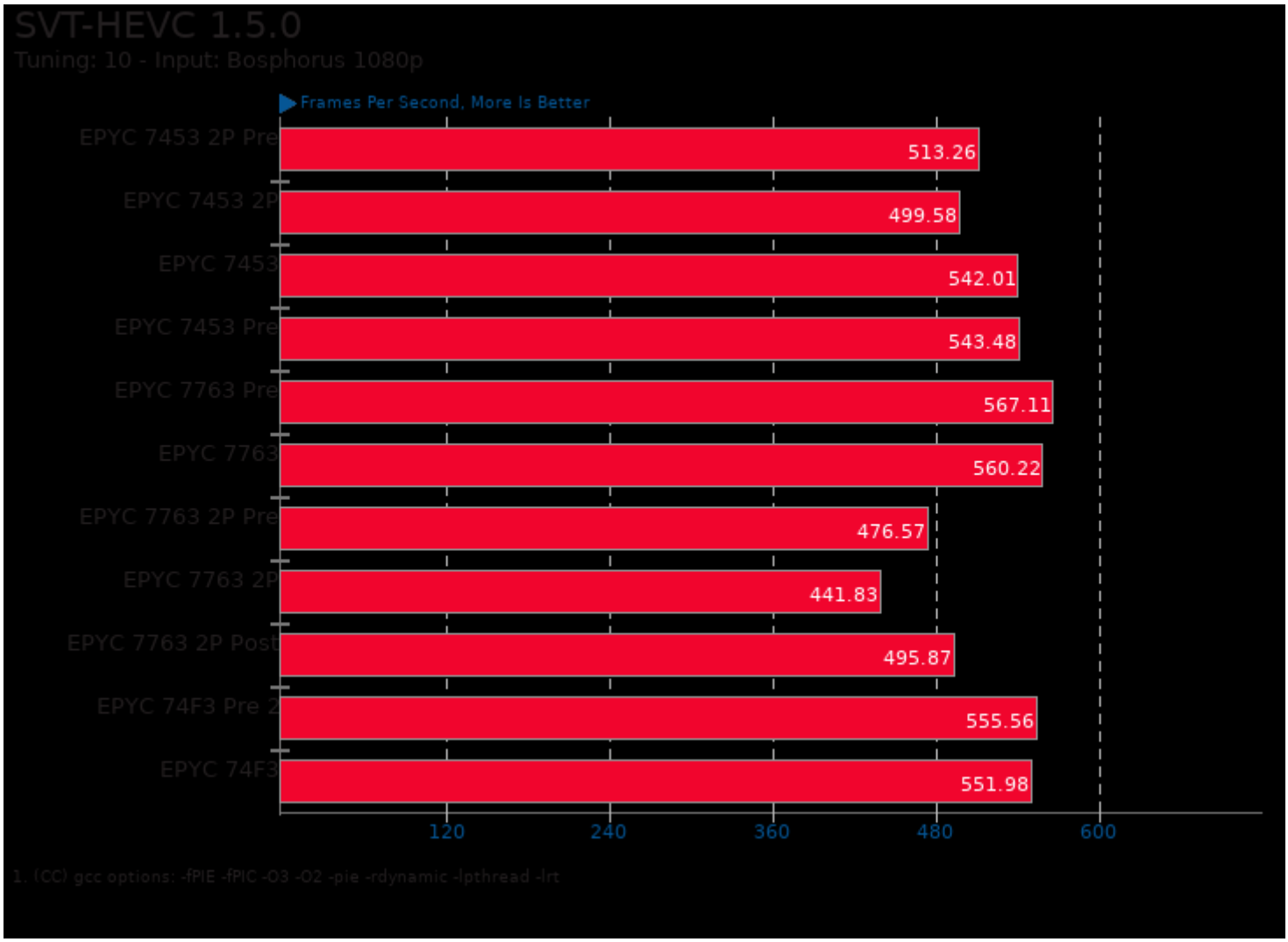
onerun-surplus



onerun-surplus




SVT-HEVC 1.5.0
Tuning: 7 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
EPYC 7453 2P Pre
322.41
EPYC 7453 2P
325.73
EPYC 7453
282.62
EPYC 7453 Pre
283.29
EPYC 7763 Pre
309.12
EPYC 7763
314.14
EPYC 7763 2P Pre
298.36
EPYC 7763 2P
302.72
EPYC 7763 2P Post
304.26
EPYC 74F3 Pre 2
291.83
EPYC 74F3
292.11
70
140
210
280
350
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt



This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 04:07.