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Threadripper 2970WX

AMD Ryzen Threadripper 2970WX 24-Core testing with a Gigabyte X399 AORUS Gaming 7 (F12h BIOS) and Sapphire AMD Radeon RX 550 640SP / 560/560X 4GB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

TR 2970WX

Processor: AMD Ryzen Threadripper 2970WX 24-Core @ 3.00GHz (24 Cores / 48 Threads), Motherboard: Gigabyte X399 AORUS Gaming 7 (F12h BIOS), Chipset: AMD 17h, Memory: 16GB, Disk: 120GB Force MP500, Graphics: Sapphire AMD Radeon RX 550 640SP / 560/560X 4GB (1300/1750MHz), Audio: Realtek ALC1220, Monitor: ASUS VP28U, Network: Qualcomm Atheros Killer E2500 + 2 x QLogic cLOM8214 1/10GbE + Intel 8265 / 8275

OS: Ubuntu 20.04, Kernel: 5.5.0-rc7-phx-k10temp6 (x86_64) 20200123, Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: modesetting 1.20.5, OpenGL: 4.5 Mesa 19.2.4 (LLVM 9.0.0), Compiler: GCC 9.2.1 20191130, File-System: ext4, Screen Resolution: 3840x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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-link-mutex

Threadripper 2970WX

```
--enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,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-build-config=bootstrap-lto-lean
--with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x800820d
```

Python Notes: Python 2.7.17 + Python 3.7.6

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 STIBP: disabled RSB filling + tsx_async_abort: Not affected

TR New

Processor: AMD Ryzen Threadripper 2970WX 24-Core @ 3.00GHz (24 Cores / 48 Threads), Motherboard: Gigabyte X399 AORUS Gaming 7 (F12h BIOS), Chipset: AMD 17h, Memory: 16GB, Disk: 120GB Force MP500, Graphics: Sapphire AMD Radeon RX 550 640SP / 560/560X 4GB (1300/1750MHz), Audio: Realtek ALC1220, Monitor: DELL S2409W, Network: Qualcomm Atheros Killer E2500 + 2 x QLogic cLOM8214 1/10GbE + Intel 8265 / 8275

OS: Ubuntu 20.04, Kernel: 5.5.0-rc7-phx-k10temp6 (x86_64) 20200123, Display Server: X Server 1.20.7, Display Driver: modesetting 1.20.7, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

```
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,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
```

Disk Notes: NONE / errors=remount-ro,relatime,rw

Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x800820d

Java Notes: OpenJDK Runtime Environment (build 11.0.7-ea+9-post-Ubuntu-1ubuntu1)

Python Notes: + Python 3.8.2

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 STIBP: disabled RSB filling + tsx_async_abort: Not affected

TR 2970WX

TR New

LAMMPS Molecular Dynamics Simulator - Rhodopsin 10.968

Protein (ns/day)

Standard Deviation 7.9%

SVT-AV1 - Enc Mode 0 - 1080p (FPS) 0.102

Standard Deviation 0.4%

SVT-AV1 - Enc Mode 4 - 1080p (FPS) 4.957

Standard Deviation 1.2%

SVT-AV1 - Enc Mode 8 - 1080p (FPS) 40.630

Standard Deviation 0.9%

VP9 libvpx Encoding - Speed 0 (FPS) 5.54

Standard Deviation 1.1%

VP9 libvpx Encoding - Speed 5 (FPS) 17.15

Standard Deviation 0.8%

rays1bench - Large Scene (mrays/s) 93.79

Standard Deviation 2.2%

Numpy Benchmark (Score) 323.33

Standard Deviation 0.3%

GEGL - Crop (sec) 8.032

Standard Deviation 1.2%

GEGL - Scale (sec) 5.866

Standard Deviation 0.4%

GEGL - Cartoon (sec)	104.168
Standard Deviation	1.7%
GEGL - Reflect (sec)	31.704
Standard Deviation	1.5%
GEGL - Antialias (sec)	43.745
Standard Deviation	2.5%
GEGL - Tile Glass (sec)	34.053
Standard Deviation	0.1%
GEGL - Wavelet Blur (sec)	69.841
Standard Deviation	1.7%
GEGL - Color Enhance (sec)	62.498
Standard Deviation	2%
GEGL - Rotate 90 Degrees (sec)	41.113
Standard Deviation	1.4%
Inkscape - SVG Files To PNG (sec)	31.431
Standard Deviation	0.3%
Mipack Benchmark - scikit_svm (sec)	11.86
Standard Deviation	0.6%
Scikit-Learn (sec)	23.755
Standard Deviation	0.3%
PostMark - D.T.P (TPS)	6578
RAMspeed SMP - Add - Integer (MB/s)	28210
Standard Deviation	2.4%
RAMspeed SMP - Copy - Integer (MB/s)	32872
Standard Deviation	6.4%
RAMspeed SMP - Scale - Integer (MB/s)	28483
Standard Deviation	3.2%
RAMspeed SMP - Triad - Integer (MB/s)	29048
Standard Deviation	2.4%
RAMspeed SMP - Average - Integer (MB/s)	31722
Standard Deviation	7.6%
RAMspeed SMP - Add - Floating Point (MB/s)	39724
Standard Deviation	1.7%
RAMspeed SMP - Copy - Floating Point (MB/s)	33548
Standard Deviation	2.8%
RAMspeed SMP - Scale - Floating Point (MB/s)	30400
Standard Deviation	0.2%
RAMspeed SMP - Triad - Floating Point (MB/s)	35794
Standard Deviation	8.7%
RAMspeed SMP - Average - Floating Point (MB/s)	33981
Standard Deviation	8.2%
pmbench - 1 - 100% Writes (us - Page Latency)	0.0428
Standard Deviation	0.6%
pmbench - 2 - 100% Writes (us - Page Latency)	0.0510
Standard Deviation	0.7%
pmbench - 4 - 100% Writes (us - Page Latency)	0.0664
Standard Deviation	5.3%
pmbench - 8 - 100% Writes (us - Page Latency)	0.0731
Standard Deviation	9%
pmbench - 16 - 100% Writes (us - Page Latency)	0.0889
Standard Deviation	0.6%
pmbench - 32 - 100% Writes (us - Page Latency)	0.1235
Standard Deviation	12.9%

pmbench - 48 - 100% Writes (us - Page Latency)	0.1757
Standard Deviation	6%
IPC_benchmark - TCP Socket - 128 (Messages/sec)	2673638
Standard Deviation	1.3%
IPC_benchmark - TCP Socket - 256 (Messages/sec)	2570512
Standard Deviation	1.4%
IPC_benchmark - TCP Socket - 512 (Messages/sec)	2318445
Standard Deviation	1.4%
IPC_benchmark - TCP Socket - 1024 (Messages/sec)	1930701
Standard Deviation	2%
IPC_benchmark - TCP Socket - 2048 (Messages/sec)	1459188
Standard Deviation	2%
IPC_benchmark - TCP Socket - 4096 (Messages/sec)	983256
Standard Deviation	1%
IPC_benchmark - Unnamed Pipe - 128 (Messages/sec)	3293702
Standard Deviation	2.6%
IPC_benchmark - Unnamed Pipe - 256 (Messages/sec)	3316092
Standard Deviation	2.8%
IPC_benchmark - Unnamed Pipe - 512 (Messages/sec)	2900904
Standard Deviation	1.7%
IPC_benchmark - Unnamed Pipe - 1024	2405862
Standard Deviation	3%
IPC_benchmark - Unnamed Pipe - 2048	1900279
Standard Deviation	2.9%
IPC_benchmark - Unnamed Pipe - 4096	1298333
Standard Deviation	0.7%
IPC_benchmark - FIFO Named Pipe - 128 (Messages/sec)	3221388
Standard Deviation	2.9%
IPC_benchmark - FIFO Named Pipe - 256 (Messages/sec)	3265910
Standard Deviation	1.2%
IPC_benchmark - FIFO Named Pipe - 512 (Messages/sec)	2899264
Standard Deviation	2%
IPC_benchmark - FIFO Named Pipe - 1024 (Messages/sec)	2439962
Standard Deviation	1%
IPC_benchmark - FIFO Named Pipe - 2048 (Messages/sec)	1842075
Standard Deviation	1.6%
IPC_benchmark - FIFO Named Pipe - 4096 (Messages/sec)	1287464
Standard Deviation	1.7%
IPC_benchmark - U.U.D.S - 128 (Messages/sec)	1921112
Standard Deviation	0.9%
IPC_benchmark - U.U.D.S - 256 (Messages/sec)	1715641
Standard Deviation	0.6%
IPC_benchmark - U.U.D.S - 512 (Messages/sec)	1685950
Standard Deviation	1.1%
IPC_benchmark - U.U.D.S - 1024 (Messages/sec)	1354564
Standard Deviation	0.8%

IPC_benchmark - U.U.D.S - 2048 (Messages/sec)	1133302
Standard Deviation	0.5%
IPC_benchmark - U.U.D.S - 4096 (Messages/sec)	798316
Standard Deviation	0.2%
Crypto++ - All Algorithms (MiB/s)	1589
Standard Deviation	0.5%
Crypto++ - Keyed Algorithms (MiB/s)	629.669903
Standard Deviation	0.2%
Crypto++ - Unkeyed Algorithms (MiB/s)	367.763594
Standard Deviation	0.1%
Crypto++ - I.E.C.P.K.A (MiB/s)	4671
Standard Deviation	1.4%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	1.07534
Standard Deviation	2.1%
Nebular Empirical Analysis Tool (sec)	18.441
Standard Deviation	0.4%
toyBrot Fractal Generator - TBB (ms)	54644
Standard Deviation	2.9%
toyBrot Fractal Generator - OpenMP (ms)	56440
Standard Deviation	1.1%
toyBrot Fractal Generator - C++ Tasks (ms)	54231
Standard Deviation	1.2%
toyBrot Fractal Generator - C++ Threads (ms)	54444
Standard Deviation	1.2%
Izbench - XZ 0 - Compression (MB/s)	36
Izbench - XZ 0 - Decompression (MB/s)	108
Izbench - Zstd 1 - Compression (MB/s)	507
Izbench - Zstd 1 - Decompression (MB/s)	1330
Standard Deviation	0.4%
Izbench - Zstd 8 - Compression (MB/s)	92
Standard Deviation	0.6%
Izbench - Zstd 8 - Decompression (MB/s)	1447
Standard Deviation	0.4%
Izbench - Crush 0 - Compression (MB/s)	93
Standard Deviation	2.6%
Izbench - Crush 0 - Decompression (MB/s)	453
Standard Deviation	0.3%
Izbench - Brotli 0 - Compression (MB/s)	483
Standard Deviation	1.1%
Izbench - Brotli 0 - Decompression (MB/s)	559
Izbench - Brotli 2 - Compression (MB/s)	193
Izbench - Brotli 2 - Decompression (MB/s)	643
Standard Deviation	0.2%
Izbench - Libdeflate 1 - Compression (MB/s)	241
Standard Deviation	1.3%
Izbench - Libdeflate 1 - Decompression (MB/s)	1161
Standard Deviation	0%
Renaissance - Scala Dotty (ms)	7312
Standard Deviation	2.9%
Renaissance - Rand Forest (ms)	5224
Standard Deviation	3.5%
Renaissance - Apache Spark ALS (ms)	6002
Standard Deviation	2.8%

Renaissance - Apache Spark Bayes (ms)	4448
Standard Deviation	6.3%
Renaissance - Savina Reactors.IO (ms)	21494
Standard Deviation	13.4%
Renaissance - A.S.P (ms)	23327
Standard Deviation	2.3%
Renaissance - I.M.D.S (ms)	8570
Standard Deviation	1.3%
Renaissance - A.U.C.T (ms)	20605
Standard Deviation	1.9%
Renaissance - G.A.U.J.F (ms)	2772
Standard Deviation	1.5%
Nettle - aes256 (Mbyte/s)	5761
Standard Deviation	0.5%
Nettle - chacha (Mbyte/s)	904.983
Standard Deviation	0.2%
Nettle - sha512 (Mbyte/s)	576.81
Standard Deviation	0.8%
Nettle - poly1305-aes (Mbyte/s)	2411
Standard Deviation	0.3%
Botan - KASUMI (MiB/s)	95.368
Standard Deviation	0.2%
Botan - AES-256 (MiB/s)	5618
Standard Deviation	0.6%
Botan - Twofish (MiB/s)	366.922
Standard Deviation	0.4%
Botan - Blowfish (MiB/s)	449.388
Standard Deviation	0.3%
Botan - CAST-256 (MiB/s)	147.405
Standard Deviation	0%
ArrayFire - BLAS CPU (GFLOPS)	520.364
Standard Deviation	0.5%
ArrayFire - C.G.C (ms)	33.28
Standard Deviation	15.8%
John The Ripper - Blowfish (Real C/S)	36425
Standard Deviation	9.3%
John The Ripper - MD5 (Real C/S)	1278667
Standard Deviation	0.6%
oneDNN MKL-DNN - IP Batch 1D - f32 (ms)	6.60396
Standard Deviation	1.1%
oneDNN MKL-DNN - IP Batch All - f32 (ms)	72.3916
Standard Deviation	0.4%
oneDNN MKL-DNN - IP Batch 1D - u8s8f32 (ms)	3.80871
Standard Deviation	0.2%
oneDNN MKL-DNN - IP Batch All - u8s8f32 (ms)	40.1382
Standard Deviation	1.3%
oneDNN MKL-DNN - D.B.d - f32 (ms)	3.78400
Standard Deviation	2.2%
oneDNN MKL-DNN - D.B.d - f32 (ms)	7.40772
Standard Deviation	1.9%
oneDNN MKL-DNN - D.B.d - u8s8f32 (ms)	60.5649
Standard Deviation	2.9%
oneDNN MKL-DNN - D.B.d - u8s8f32 (ms)	5.77938

Standard Deviation	8.4%
oneDNN MKL-DNN - R.N.N.T - f32 (ms)	360.673
Standard Deviation	2.7%
oneDNN MKL-DNN - R.N.N.I - f32 (ms)	54.3875
Standard Deviation	0.7%
dav1d - Chimera 1080p (FPS)	430.58
Standard Deviation	0.4%
dav1d - Summer Nature 4K (FPS)	179.85
Standard Deviation	0.5%
dav1d - S.N.1 (FPS)	470.32
Standard Deviation	0.2%
dav1d - C.1.1.b (FPS)	102.32
Standard Deviation	0.3%
Embree - Pathtracer - Crown (FPS)	19.7103
Standard Deviation	2%
Embree - Pathtracer ISPC - Crown (FPS)	18.0269
Standard Deviation	1.5%
Embree - Pathtracer - Asian Dragon (FPS)	20.4481
Standard Deviation	2.7%
Embree - Pathtracer - Asian Dragon Obj (FPS)	18.6591
Standard Deviation	3.1%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	20.0870
Standard Deviation	0.6%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	17.8267
Standard Deviation	1.5%
rav1e - 1 (FPS)	0.134
Standard Deviation	1.1%
rav1e - 5 (FPS)	0.468
Standard Deviation	0.1%
rav1e - 6 (FPS)	1.105
Standard Deviation	0.2%
rav1e - 10 (FPS)	2.408
Standard Deviation	0.7%
x264 - H.2.V.E (FPS)	137.79
Standard Deviation	0.5%
Intel Open Image Denoise - Memorial (Images / Sec)	8.27
Standard Deviation	2.8%
OpenVKL - vklBenchmark (Items / Sec)	224.44
Standard Deviation	0.3%
LuxCoreRender - DLSC (M samples/sec)	3.47
Standard Deviation	2.8%
LuxCoreRender - R.C.a.P (M samples/sec)	3.64
Standard Deviation	1.1%
Timed Apache Compilation - Time To Compile (sec)	25.870
Standard Deviation	0.5%
Timed FFmpeg Compilation - Time To Compile (sec)	38.019
Standard Deviation	1.8%
Timed GCC Compilation - Time To Compile (sec)	931.024
Standard Deviation	0.2%
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	103.226
Standard Deviation	0.2%
Timed MPlayer Compilation - Time To Compile (sec)	22.750

Timed PHP Compilation - Time To Compile (sec)	Standard Deviation	0.6%
		49.785
YafaRay - T.T.F.S.S (sec)	Standard Deviation	0.4%
		102.350
Tachyon - Total Time (sec)	Standard Deviation	2%
		46.9467
LevelDB - Hot Read (us/Op)	Standard Deviation	0.9%
		39.394
LevelDB - Fill Sync (MB/s)	Standard Deviation	0.9%
		2.6
LevelDB - Fill Sync (us/Op)	Standard Deviation	0%
		2022
LevelDB - Overwrite (MB/s)	Standard Deviation	0.4%
		16.9
LevelDB - Overwrite (us/Op)	Standard Deviation	0.3%
		312.731
LevelDB - Rand Fill (MB/s)	Standard Deviation	0.2%
		17.0
LevelDB - Rand Fill (us/Op)	Standard Deviation	0.3%
		312.679
LevelDB - Rand Read (us/Op)	Standard Deviation	0.3%
		37.364
LevelDB - Seek Rand (us/Op)	Standard Deviation	1.2%
		71.838
LevelDB - Rand Delete (us/Op)	Standard Deviation	1.2%
		267.907
LevelDB - Seq Fill (MB/s)	Standard Deviation	0.6%
		17.3
LevelDB - Seq Fill (us/Op)	Standard Deviation	0.7%
		306.282
KeyDB (Ops/sec)	Standard Deviation	0.7%
		323133
Basis Universal - ETC1S (sec)	Standard Deviation	1%
		50.417
Basis Universal - UASTC Level 0 (sec)	Standard Deviation	1.3%
		7.743
Basis Universal - UASTC Level 2 (sec)	Standard Deviation	0.2%
		18.030
Basis Universal - UASTC Level 3 (sec)	Standard Deviation	0.7%
		30.303
Basis Universal - U.L.2.R.P.P (sec)	Standard Deviation	1.6%
		652.417
RawTherapee - T.B.T (sec)	Standard Deviation	0.3%
		56.723
Chaos Group V-RAY - CPU (Ksamples)	Standard Deviation	0.1%
		26295
Blender - BMW27 - CPU-Only (sec)	Standard Deviation	2.8%
		93.19
Blender - Classroom - CPU-Only (sec)	Standard Deviation	0.3%
		241.76
Blender - Fishy Cat - CPU-Only (sec)	Standard Deviation	0.3%
		139.54
	Standard Deviation	0.4%

Blender - Barbershop - CPU-Only (sec)	382.73
Standard Deviation	0.7%
Blender - Pabellon Barcelona - CPU-Only (sec)	340.07
Standard Deviation	0.7%
Numenta Anomaly Benchmark - EXPoSE (sec)	1751
Standard Deviation	0.8%
Numenta Anomaly Benchmark - Relative Entropy	17.768
Standard Deviation	0.4%
Numenta Anomaly Benchmark - Windowed Gaussian (sec)	8.177
Standard Deviation	1.3%

LAMMPS Molecular Dynamics Simulator 9Jan2020

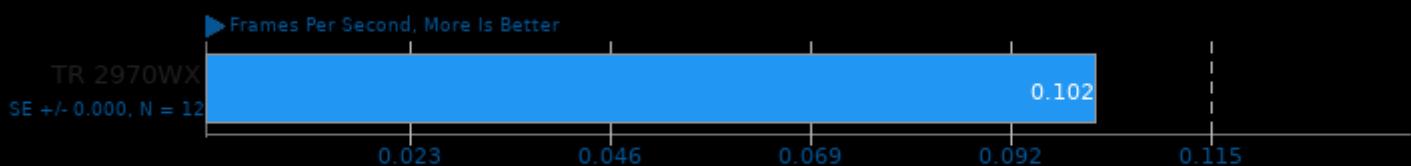
Model: Rhodopsin Protein



1. (CXX) g++ options: -O3 -rdynamic -fftw3 -lm

SVT-AV1 0.8

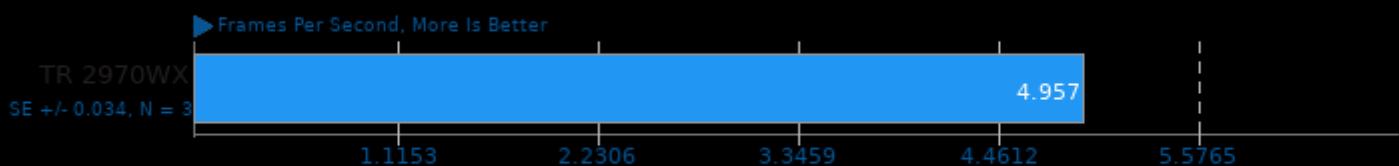
Encoder Mode: Enc Mode 0 - Input: 1080p



1. (CXX) g++ options: -fPIE -fPIC -pie

SVT-AV1 0.8

Encoder Mode: Enc Mode 4 - Input: 1080p



1. (CXX) g++ options: -fPIE -fPIC -pie

SVT-AV1 0.8

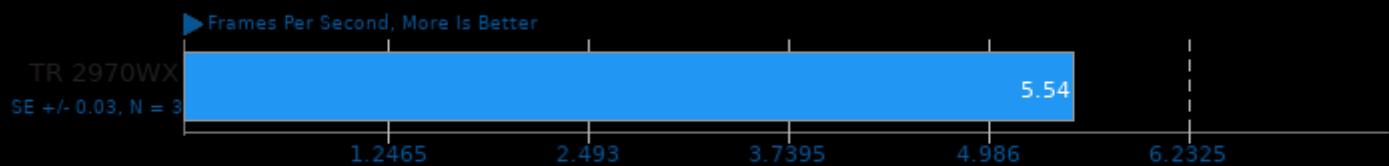
Encoder Mode: Enc Mode 8 - Input: 1080p



1. (CXX) g++ options: -fPIE -fPIC -pie

VP9 libvpx Encoding 1.8.2

Speed: Speed 0



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=c++11

VP9 libvpx Encoding 1.8.2

Speed: Speed 5



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=c++11

rays1bench 2020-01-09

Large Scene



Numpy Benchmark



GEGL

Operation: Crop



GEGL

Operation: Scale



GEGL

Operation: Cartoon



GEGL

Operation: Reflect

**GEGL**

Operation: Antialias

**GEGL**

Operation: Tile Glass

**GEGL**

Operation: Wavelet Blur

**GEGL**

Operation: Color Enhance

**GEGL**

Operation: Rotate 90 Degrees



Inkscape

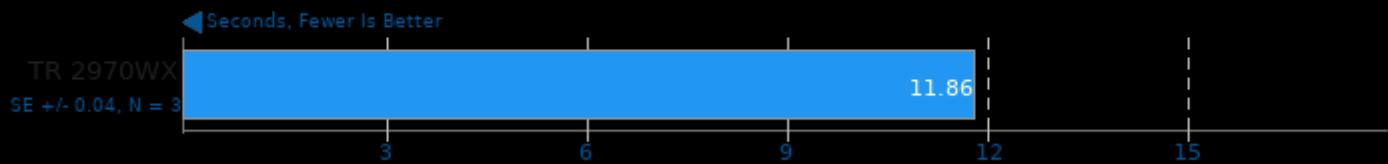
Operation: SVG Files To PNG



1. Inkscape 0.92.4 (5da689c313, 2019-01-14)

Milpack Benchmark

Benchmark: scikit_svm

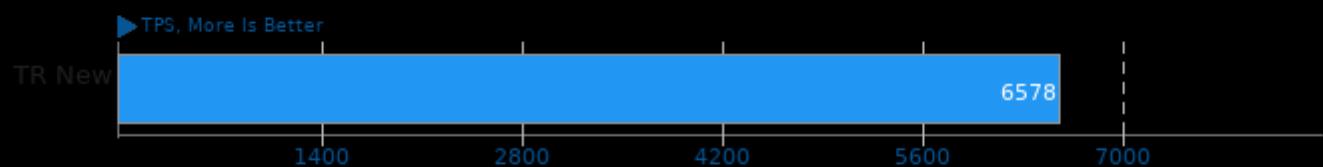


Scikit-Learn 0.22.1



PostMark 1.51

Disk Transaction Performance



1. (CC) gcc options: -O3

RAMspeed SMP 3.5.0

Type: Add - Benchmark: Integer



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

RAMspeed SMP 3.5.0

Type: Copy - Benchmark: Integer



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

RAMspeed SMP 3.5.0

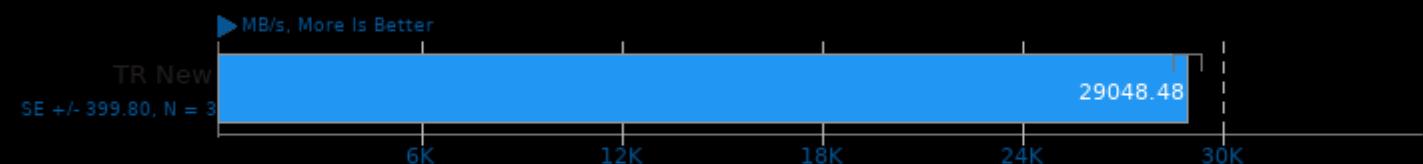
Type: Scale - Benchmark: Integer



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

RAMspeed SMP 3.5.0

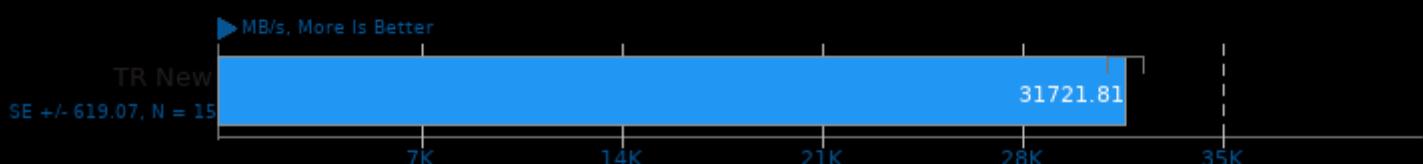
Type: Triad - Benchmark: Integer



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

RAMspeed SMP 3.5.0

Type: Average - Benchmark: Integer



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

RAMspeed SMP 3.5.0

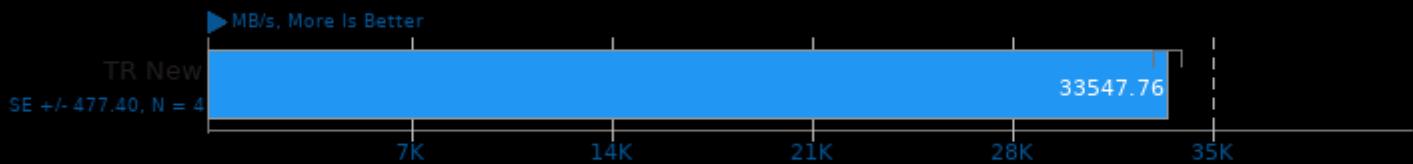
Type: Add - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

Type: Copy - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

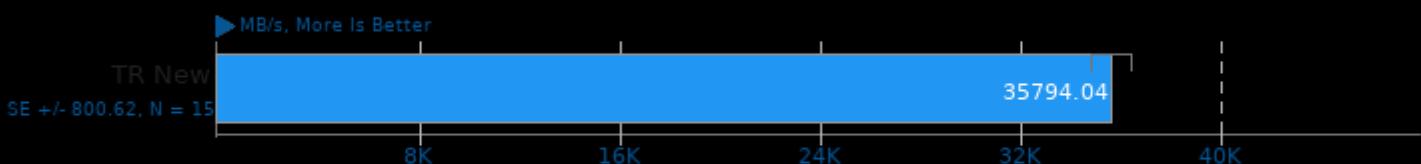
Type: Scale - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

Type: Triad - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

Type: Average - Benchmark: Floating Point



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

pmbench

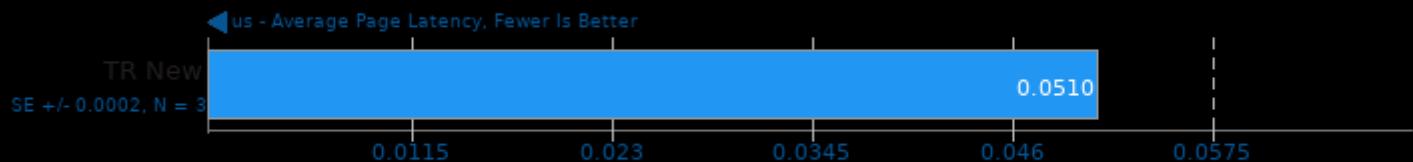
Concurrent Worker Threads: 1 - Read-Write Ratio: 100% Writes



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

Concurrent Worker Threads: 2 - Read-Write Ratio: 100% Writes



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

Concurrent Worker Threads: 4 - Read-Write Ratio: 100% Writes



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

Concurrent Worker Threads: 8 - Read-Write Ratio: 100% Writes



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

Concurrent Worker Threads: 16 - Read-Write Ratio: 100% Writes



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

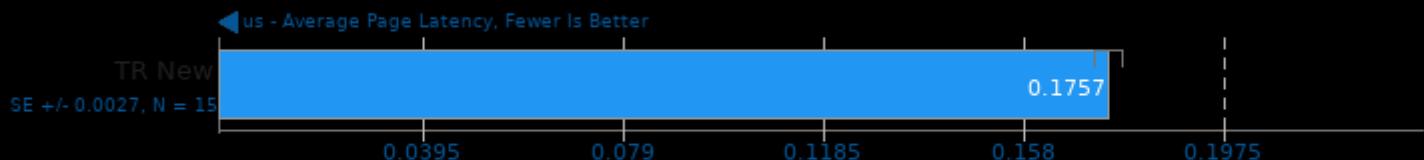
Concurrent Worker Threads: 32 - Read-Write Ratio: 100% Writes



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

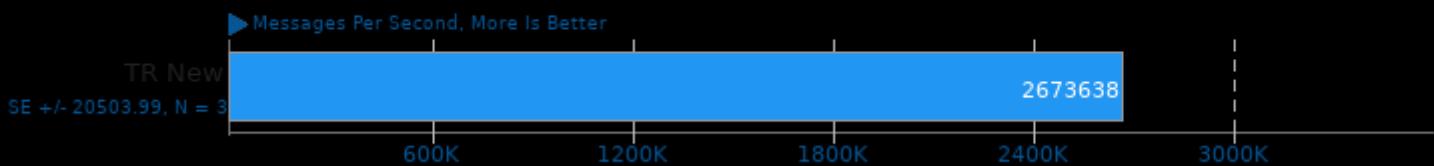
Concurrent Worker Threads: 48 - Read-Write Ratio: 100% Writes



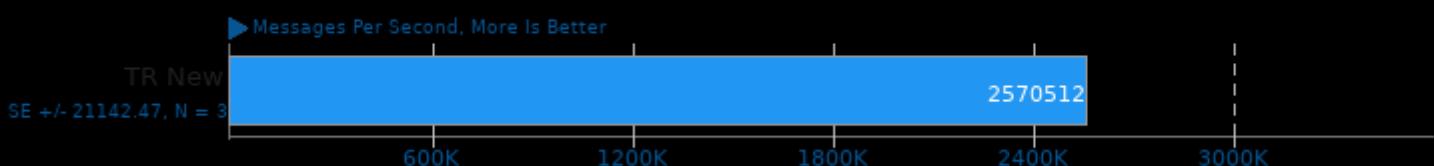
1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

IPC_benchmark

Type: TCP Socket - Message Bytes: 128

**IPC_benchmark**

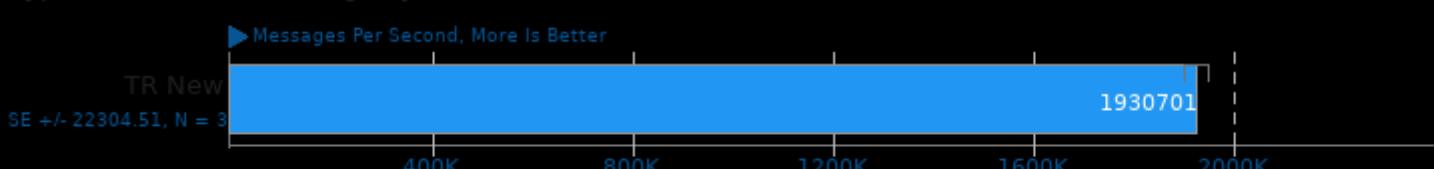
Type: TCP Socket - Message Bytes: 256

**IPC_benchmark**

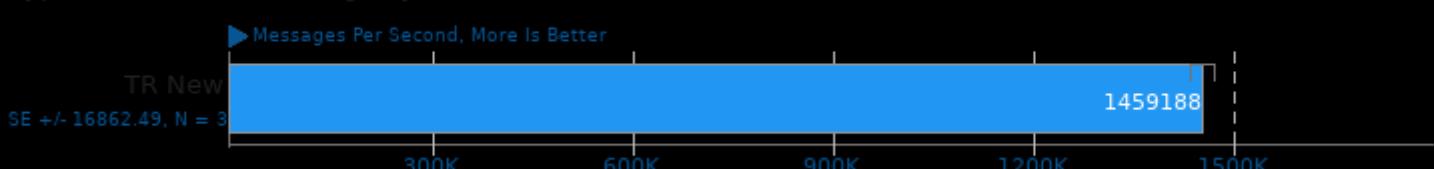
Type: TCP Socket - Message Bytes: 512

**IPC_benchmark**

Type: TCP Socket - Message Bytes: 1024

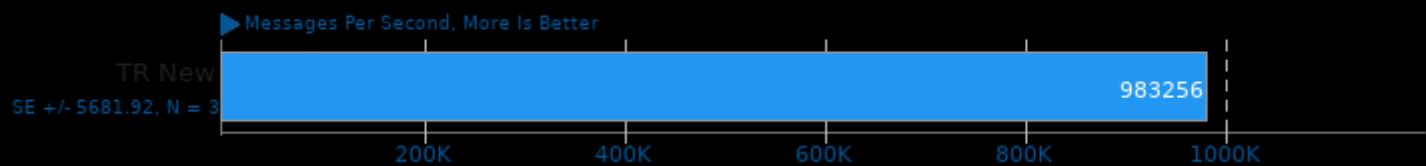
**IPC_benchmark**

Type: TCP Socket - Message Bytes: 2048

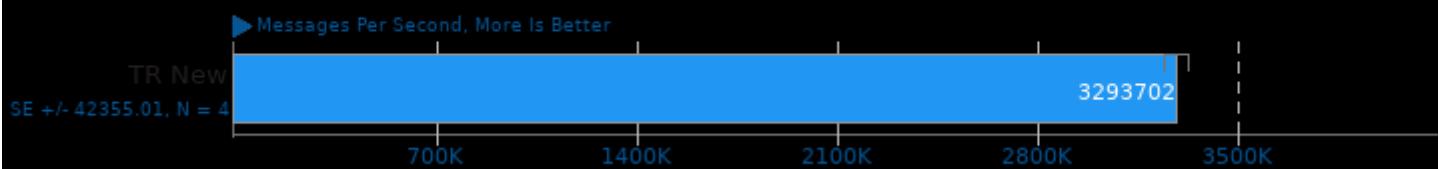


IPC_benchmark

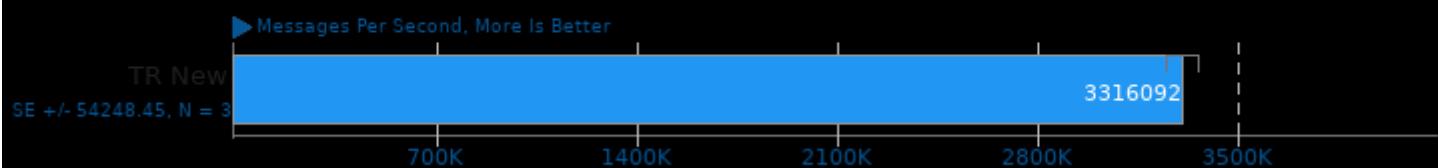
Type: TCP Socket - Message Bytes: 4096

**IPC_benchmark**

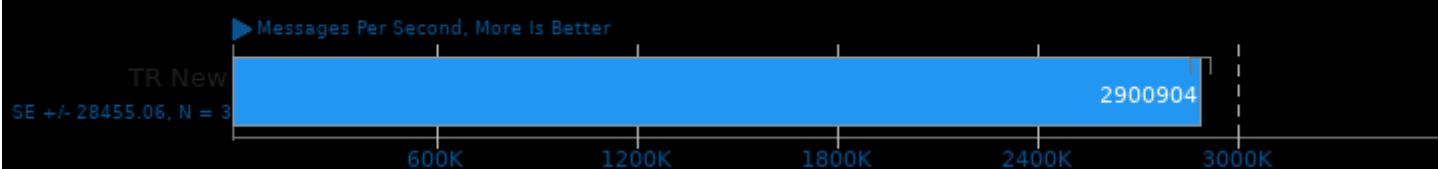
Type: Unnamed Pipe - Message Bytes: 128

**IPC_benchmark**

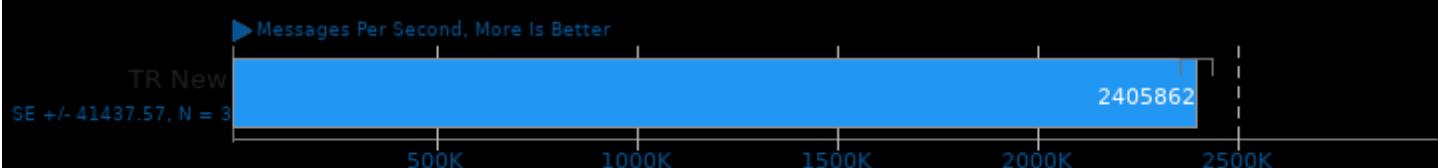
Type: Unnamed Pipe - Message Bytes: 256

**IPC_benchmark**

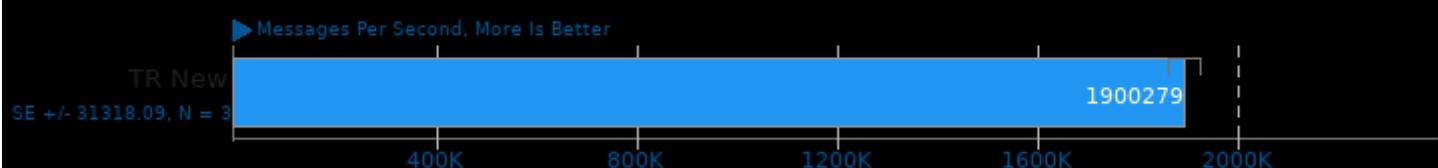
Type: Unnamed Pipe - Message Bytes: 512

**IPC_benchmark**

Type: Unnamed Pipe - Message Bytes: 1024

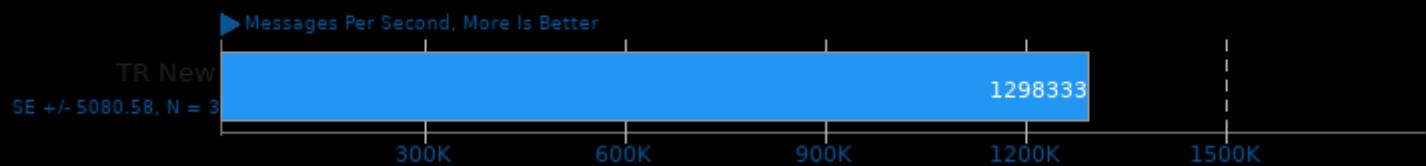
**IPC_benchmark**

Type: Unnamed Pipe - Message Bytes: 2048

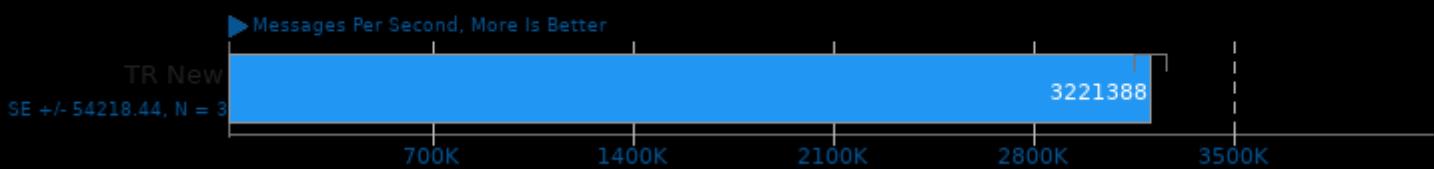


IPC_benchmark

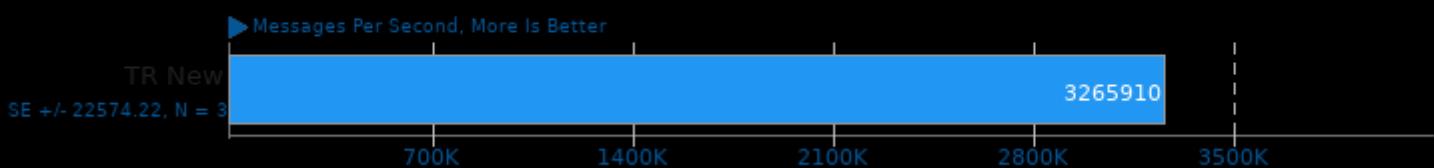
Type: Unnamed Pipe - Message Bytes: 4096

**IPC_benchmark**

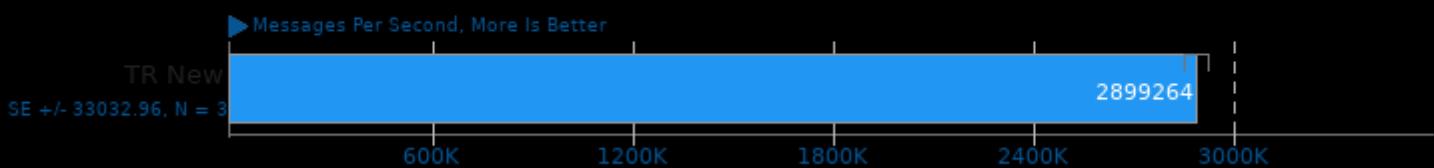
Type: FIFO Named Pipe - Message Bytes: 128

**IPC_benchmark**

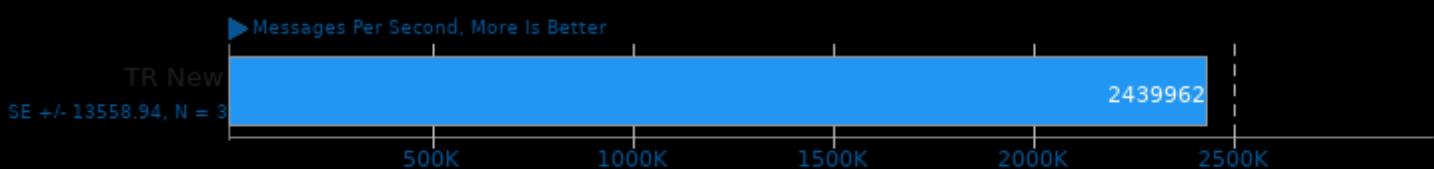
Type: FIFO Named Pipe - Message Bytes: 256

**IPC_benchmark**

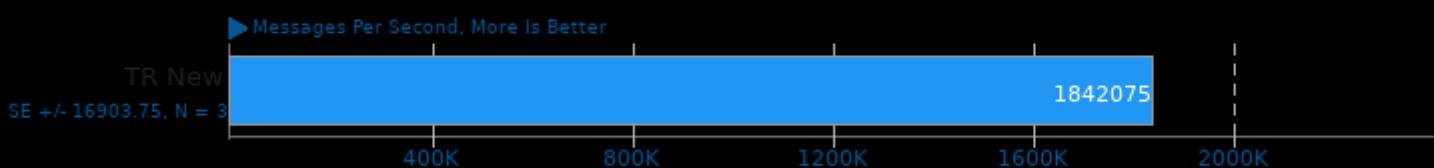
Type: FIFO Named Pipe - Message Bytes: 512

**IPC_benchmark**

Type: FIFO Named Pipe - Message Bytes: 1024

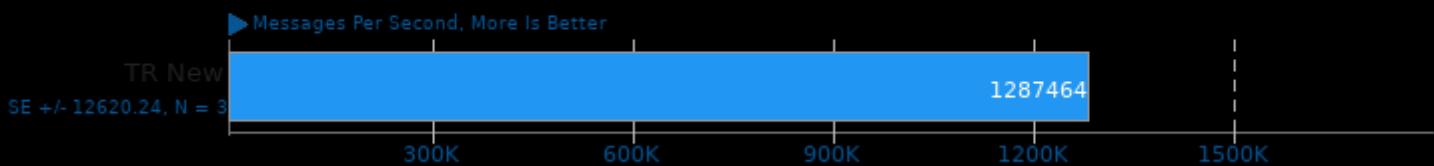
**IPC_benchmark**

Type: FIFO Named Pipe - Message Bytes: 2048

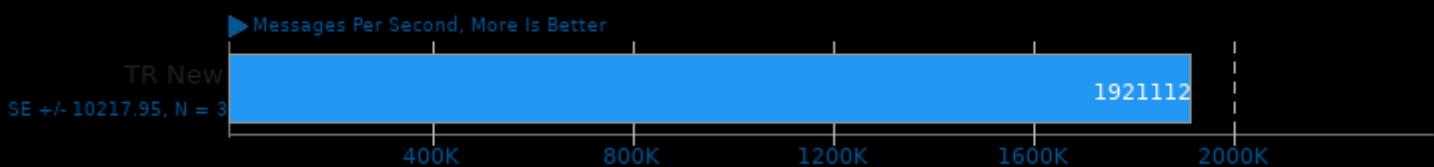


IPC_benchmark

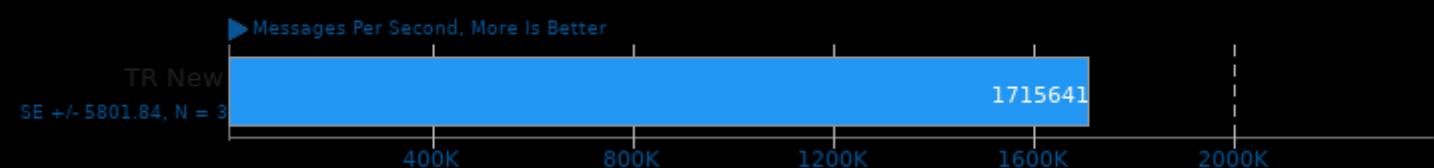
Type: FIFO Named Pipe - Message Bytes: 4096

**IPC_benchmark**

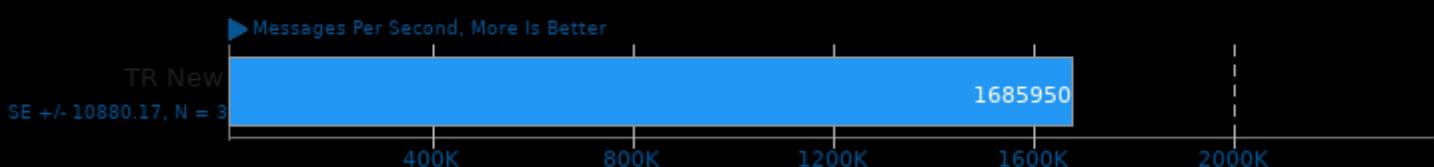
Type: Unnamed Unix Domain Socket - Message Bytes: 128

**IPC_benchmark**

Type: Unnamed Unix Domain Socket - Message Bytes: 256

**IPC_benchmark**

Type: Unnamed Unix Domain Socket - Message Bytes: 512

**IPC_benchmark**

Type: Unnamed Unix Domain Socket - Message Bytes: 1024

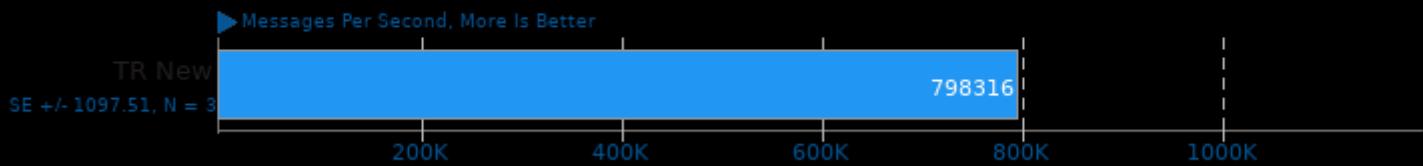
**IPC_benchmark**

Type: Unnamed Unix Domain Socket - Message Bytes: 2048



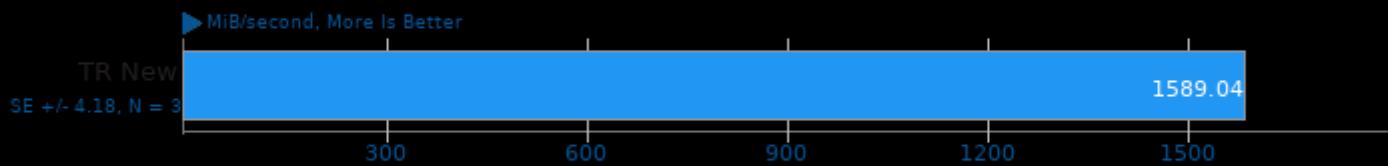
IPC_benchmark

Type: Unnamed Unix Domain Socket - Message Bytes: 4096



Crypto++ 8.2

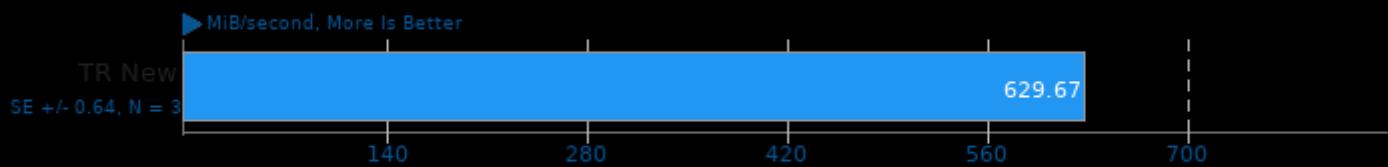
Test: All Algorithms



1. (CXX) g++ options: -g2 -O3 -fPIC -pthread -pipe

Crypto++ 8.2

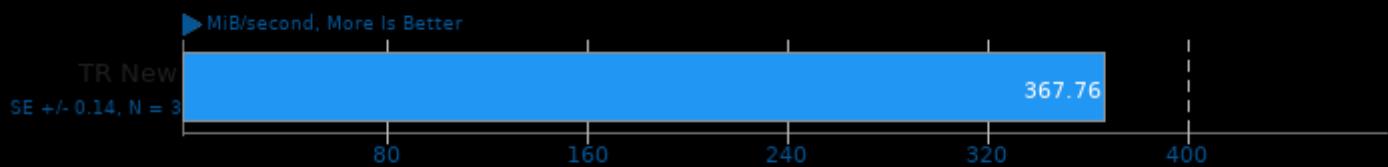
Test: Keyed Algorithms



1. (CXX) g++ options: -g2 -O3 -fPIC -pthread -pipe

Crypto++ 8.2

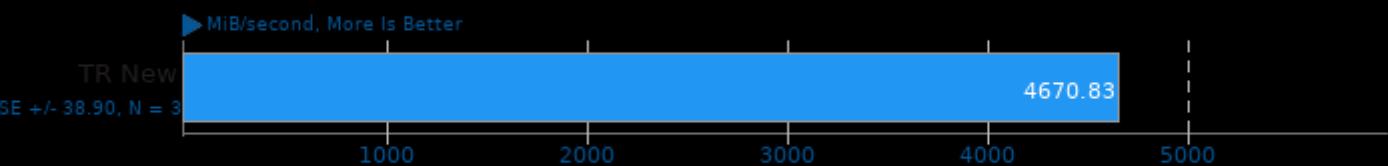
Test: Unkeyed Algorithms



1. (CXX) g++ options: -g2 -O3 -fPIC -pthread -pipe

Crypto++ 8.2

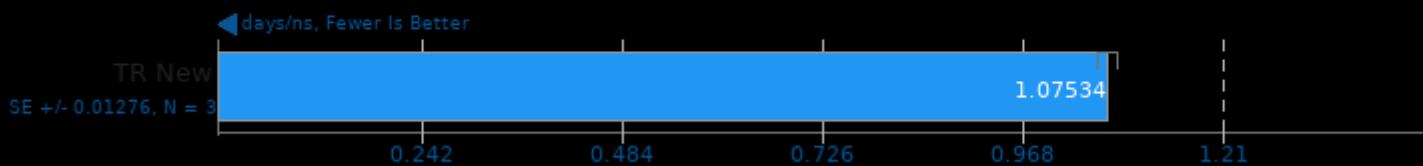
Test: Integer + Elliptic Curve Public Key Algorithms



1. (CXX) g++ options: -g2 -O3 -fPIC -pthread -pipe

NAMD 2.13

ATPase Simulation - 327,506 Atoms



Nebular Empirical Analysis Tool 2020-02-29



1. (F9X) gfortran options: -cpp -ffree-line-length=0 -fsource/ -fopenmp -O3 -fno-backtrace

toyBrot Fractal Generator

Implementation: TBB



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

toyBrot Fractal Generator

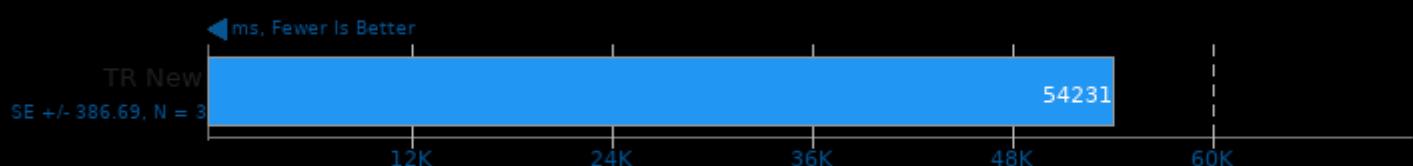
Implementation: OpenMP



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

toyBrot Fractal Generator

Implementation: C++ Tasks



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

toyBrot Fractal Generator

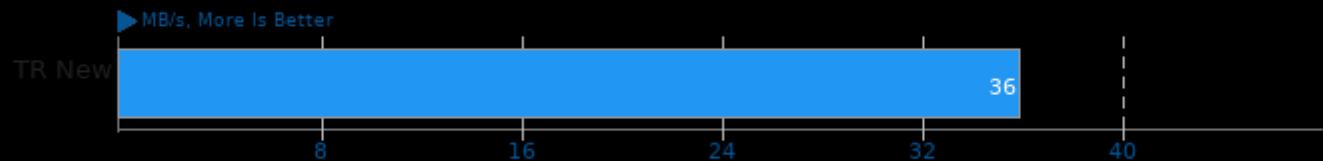
Implementation: C++ Threads



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

Izbench 1.8

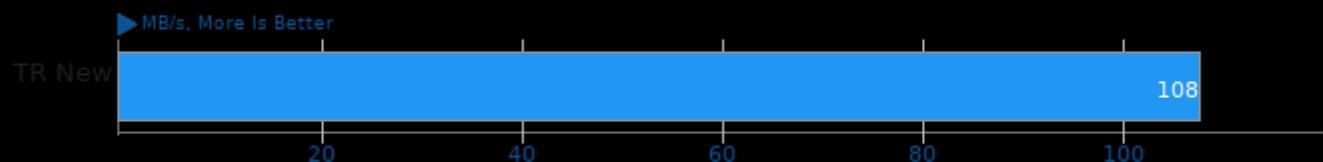
Test: XZ 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

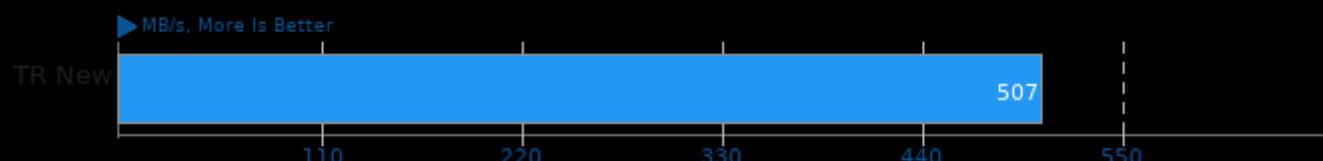
Test: XZ 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

Test: Zstd 1 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

Test: Zstd 1 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

Test: Zstd 8 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

Test: Zstd 8 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

Test: Crush 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

Test: Crush 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

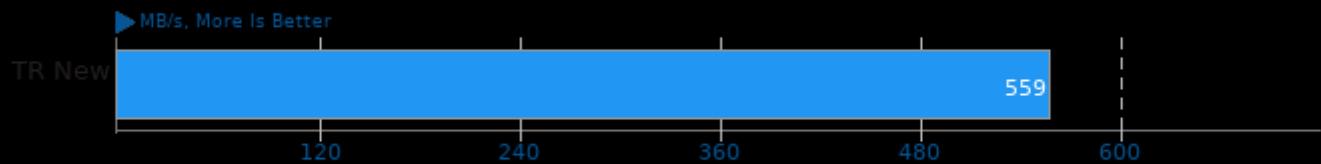
Test: Brotli 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

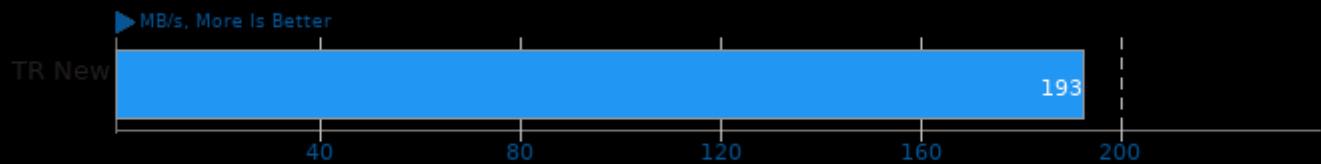
Test: Brotli 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

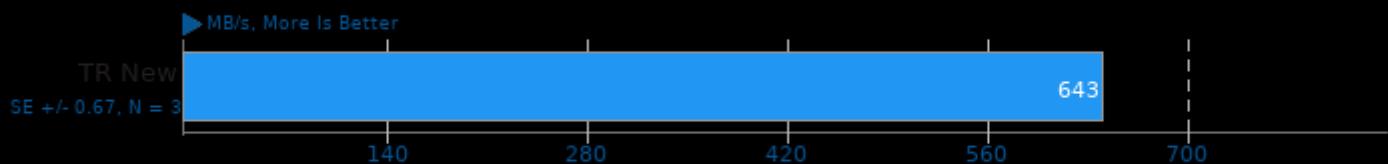
Test: Brotli 2 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

Test: Brotli 2 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

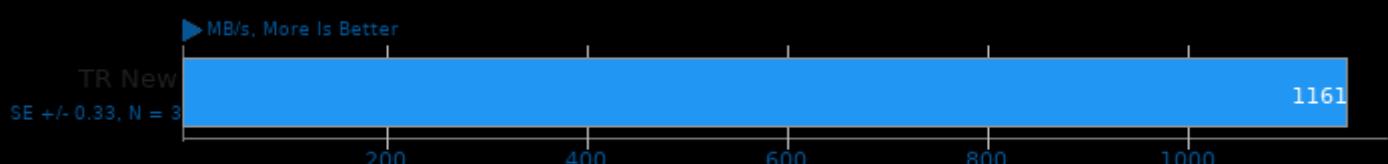
Test: Libdeflate 1 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Izbench 1.8

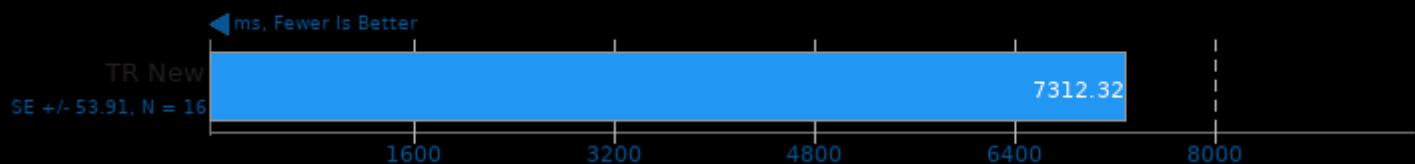
Test: Libdeflate 1 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Renaissance 0.10.0

Test: Scala Dotty



Renaissance 0.10.0

Test: Random Forest



Renaissance 0.10.0

Test: Apache Spark ALS



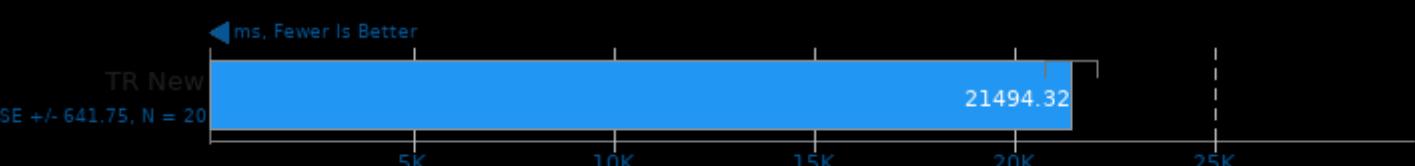
Renaissance 0.10.0

Test: Apache Spark Bayes



Renaissance 0.10.0

Test: Savina Reactors.IO



Renaissance 0.10.0

Test: Apache Spark PageRank



Renaissance 0.10.0

Test: In-Memory Database Shootout



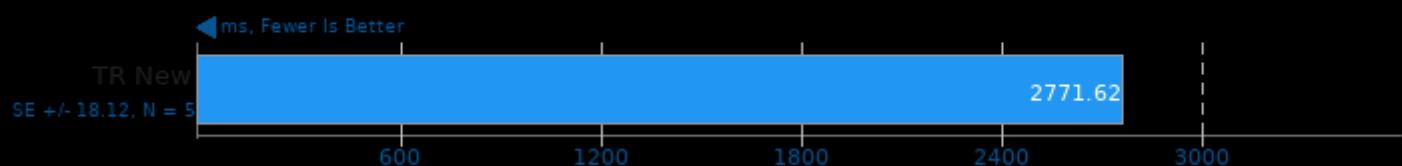
Renaissance 0.10.0

Test: Akka Unbalanced Cobwebbed Tree



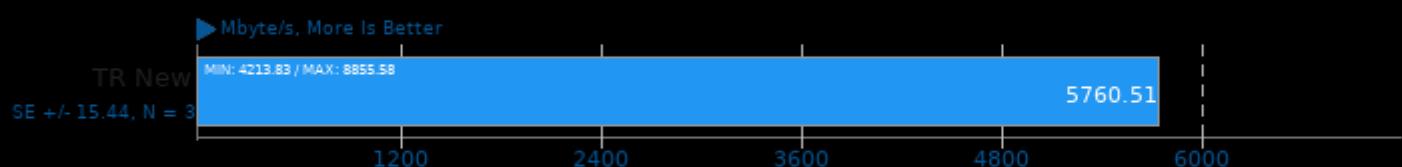
Renaissance 0.10.0

Test: Genetic Algorithm Using Jenetics + Futures



Nettle 3.5.1

Test: aes256



1. (CC) gcc options: -O2 -ggdb3 -Inettle -lgmp -lm -lcrypto

Nettle 3.5.1

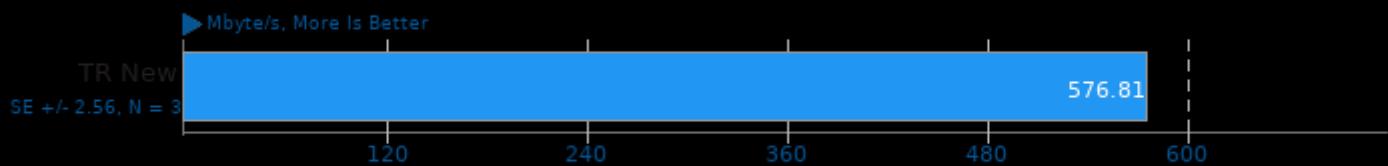
Test: chacha



1. (CC) gcc options: -O2 -ggdb3 -Inettle -lgmp -lm -lcrypto

Nettle 3.5.1

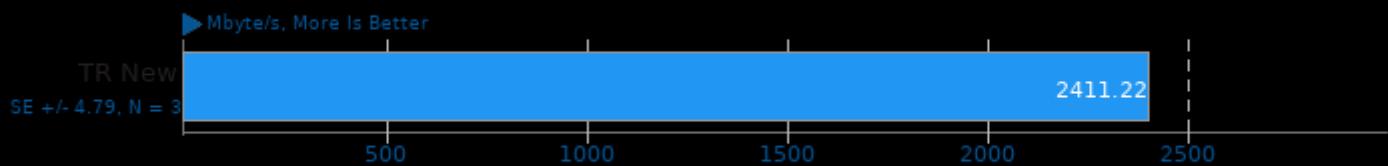
Test: sha512



1. (CC) gcc options: -O2 -ggdb3 -Inettle -lgmp -lrypto

Nettle 3.5.1

Test: poly1305-aes



1. (CC) gcc options: -O2 -ggdb3 -Inettle -lgmp -lrypto

Botan 2.13.0

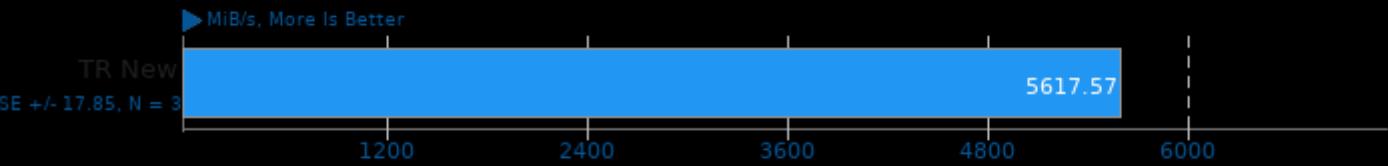
Test: KASUMI



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

Botan 2.13.0

Test: AES-256



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

Botan 2.13.0

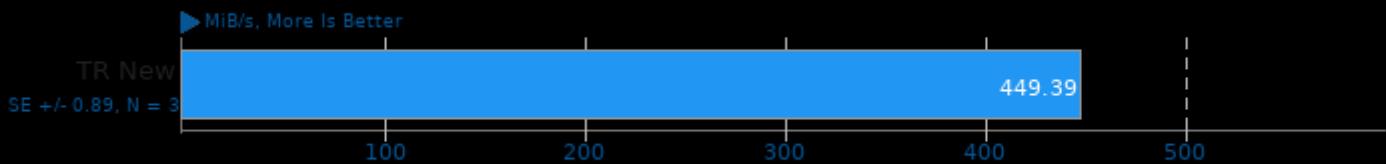
Test: Twofish



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

Botan 2.13.0

Test: Blowfish



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

Botan 2.13.0

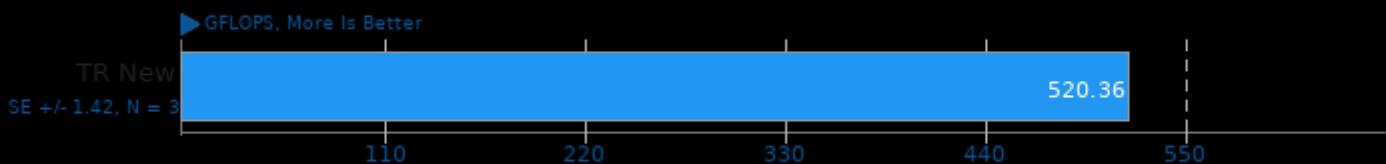
Test: CAST-256



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

ArrayFire 3.7

Test: BLAS CPU



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

ArrayFire 3.7

Test: Conjugate Gradient CPU



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

John The Ripper 1.9.0-jumbo-1

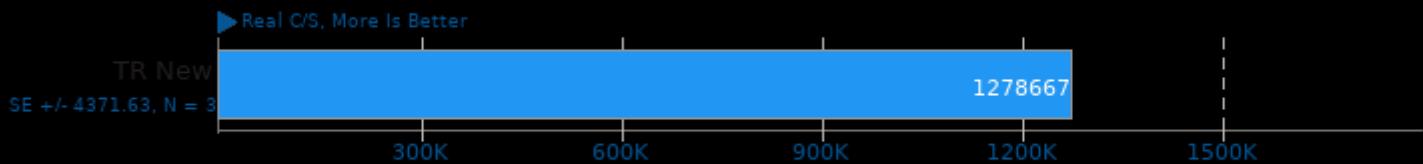
Test: Blowfish



1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

John The Ripper 1.9.0-jumbo-1

Test: MD5



1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

oneDNN MKL-DNN 1.3

Harness: IP Batch 1D - Data Type: f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -pthread -ldl

oneDNN MKL-DNN 1.3

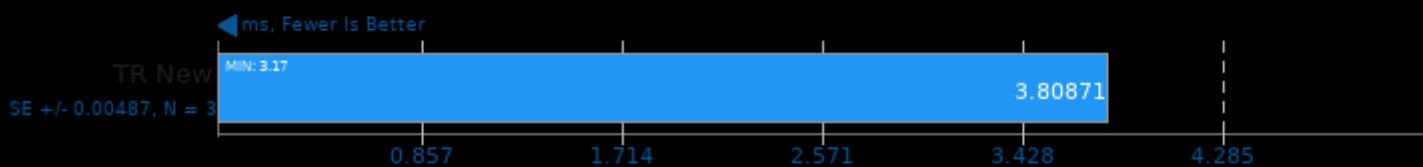
Harness: IP Batch All - Data Type: f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -pthread -ldl

oneDNN MKL-DNN 1.3

Harness: IP Batch 1D - Data Type: u8s8f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -pthread -ldl

oneDNN MKL-DNN 1.3

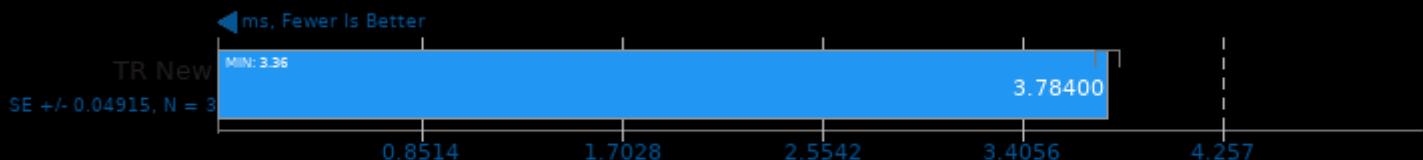
Harness: IP Batch All - Data Type: u8s8f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -pthread -ldl

oneDNN MKL-DNN 1.3

Harness: Deconvolution Batch deconv_1d - Data Type: f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -lpthread -ldl

oneDNN MKL-DNN 1.3

Harness: Deconvolution Batch deconv_3d - Data Type: f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -lpthread -ldl

oneDNN MKL-DNN 1.3

Harness: Deconvolution Batch deconv_1d - Data Type: u8s8f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -lpthread -ldl

oneDNN MKL-DNN 1.3

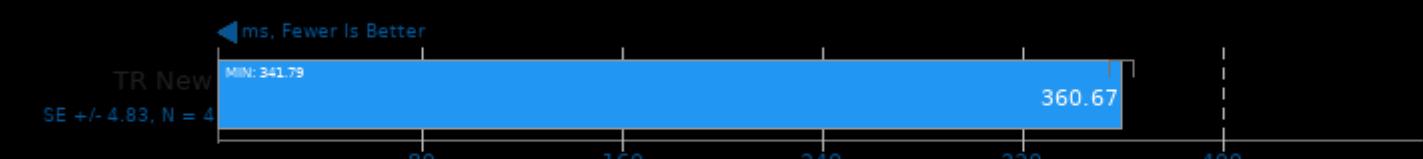
Harness: Deconvolution Batch deconv_3d - Data Type: u8s8f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -lpthread -ldl

oneDNN MKL-DNN 1.3

Harness: Recurrent Neural Network Training - Data Type: f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -lpthread -ldl

oneDNN MKL-DNN 1.3

Harness: Recurrent Neural Network Inference - Data Type: f32



1. (CXX) g++ options: -O3 -march=native -std=c++11 -msse4.1 -fPIC -fopenmp -pie -lpthread -ldl

dav1d 0.6.0

Video Input: Chimera 1080p



1. (CC) gcc options: -pthread

dav1d 0.6.0

Video Input: Summer Nature 4K



1. (CC) gcc options: -pthread

dav1d 0.6.0

Video Input: Summer Nature 1080p



1. (CC) gcc options: -pthread

dav1d 0.6.0

Video Input: Chimera 1080p 10-bit



1. (CC) gcc options: -pthread

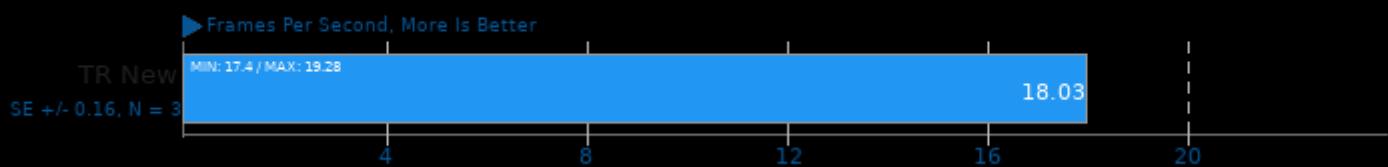
Embree 3.9.0

Binary: Pathtracer - Model: Crown



Embree 3.9.0

Binary: Pathtracer ISPC - Model: Crown



Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon



Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon Obj



Embree 3.9.0

Binary: Pathtracer ISPC - Model: Asian Dragon



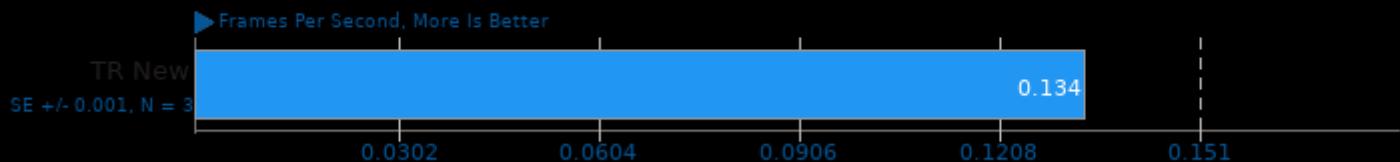
Embree 3.9.0

Binary: Pathtracer ISPC - Model: Asian Dragon Obj

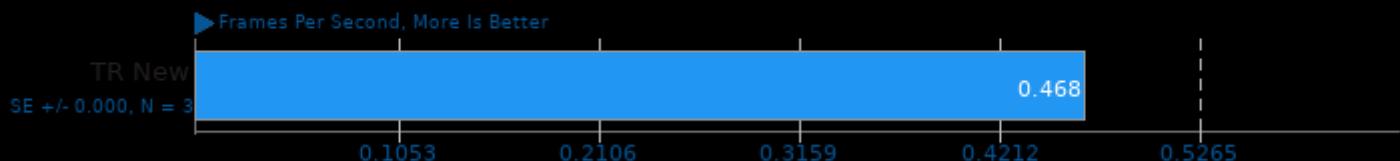


rav1e 0.3.0

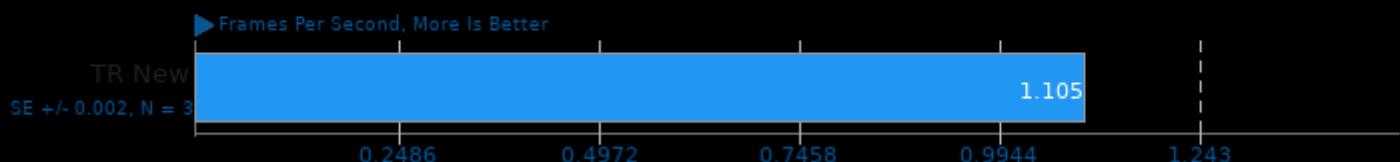
Speed: 1

**rav1e 0.3.0**

Speed: 5

**rav1e 0.3.0**

Speed: 6

**rav1e 0.3.0**

Speed: 10

**x264 2019-12-17**

H.264 Video Encoding



1. (CC) gcc options: -ldl -lavformat -lavcodec -lavutil -lswscale -m64 -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

Intel Open Image Denoise 1.2.0

Scene: Memorial

**OpenVKL 0.9**

Benchmark: vklBenchmark

**LuxCoreRender 2.3**

Scene: DLSC

**LuxCoreRender 2.3**

Scene: Rainbow Colors and Prism

**Timed Apache Compilation 2.4.41**

Time To Compile

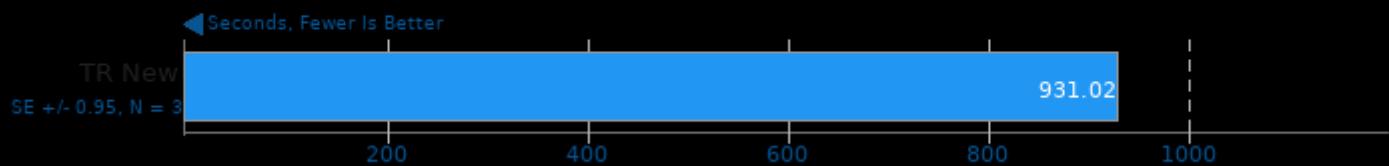
**Timed FFmpeg Compilation 4.2.2**

Time To Compile



Timed GCC Compilation 9.3.0

Time To Compile



Timed GDB GNU Debugger Compilation 9.1

Time To Compile



Timed MPlayer Compilation 1.4

Time To Compile



Timed PHP Compilation 7.4.2

Time To Compile



YafaRay 3.4.1

Total Time For Sample Scene



1. (CXX) g++ options: -std=c++11 -O3 -ffast-math -rdynamic -ldl -lmath -lm -lfloor -fHalf -lz -lxmlThread -lxml2 -lfreetype -lpthread

Tachyon 0.99b6

Total Time



1. (CC) gcc options: -m64 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

LevelDB 1.22

Benchmark: Hot Read



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Fill Sync



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Fill Sync



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Overwrite



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Overwrite



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Random Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Random Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Random Read



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Seek Random



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Random Delete



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Sequential Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

Benchmark: Sequential Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

KeyDB 5.3.1



1. (CXX) g++ options: -O2 -levent -lpthread -lz -lpcres

Basis Universal 1.12

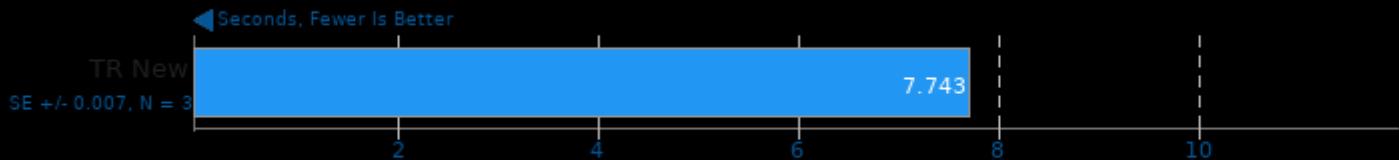
Settings: ETC1S



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.12

Settings: UASTC Level 0



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.12

Settings: UASTC Level 2



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.12

Settings: UASTC Level 3



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.12

Settings: UASTC Level 2 + RDO Post-Processing



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

RawTherapee

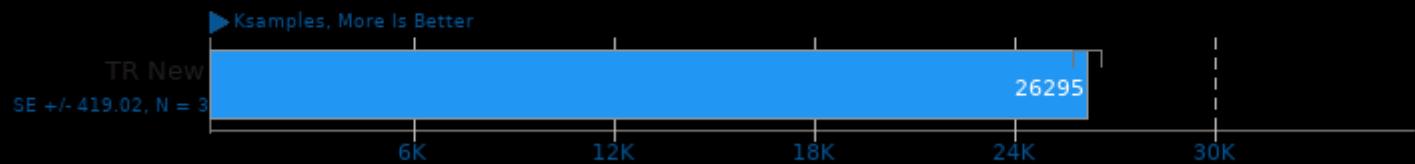
Total Benchmark Time



1. RawTherapee, version 5.8, command line.

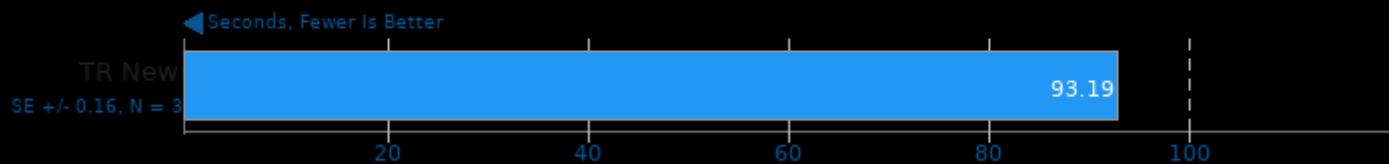
Chaos Group V-RAY 4.10.07

Mode: CPU



Blender 2.82

Blend File: BMW27 - Compute: CPU-Only



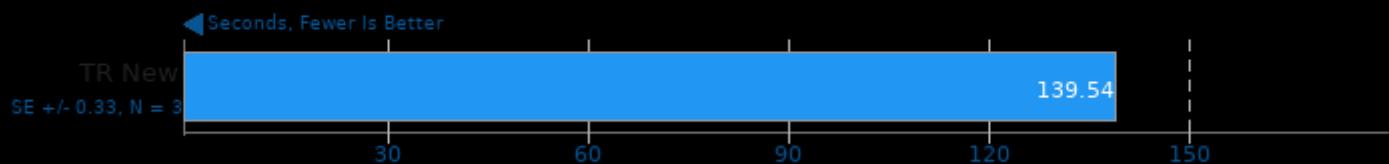
Blender 2.82

Blend File: Classroom - Compute: CPU-Only



Blender 2.82

Blend File: Fishy Cat - Compute: CPU-Only



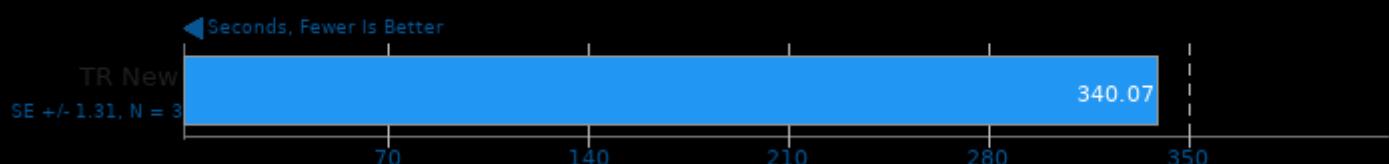
Blender 2.82

Blend File: Barbershop - Compute: CPU-Only



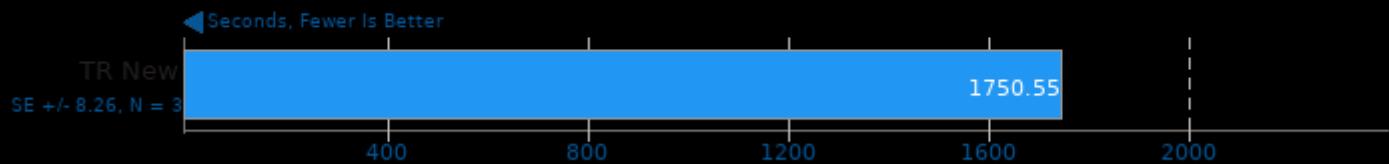
Blender 2.82

Blend File: Pabellon Barcelona - Compute: CPU-Only



Numenta Anomaly Benchmark 1.1

Detector: EXPoSE



Numenta Anomaly Benchmark 1.1

Detector: Relative Entropy



Numenta Anomaly Benchmark 1.1

Detector: Windowed Gaussian



This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 16:18.