



## **ss6**

AMD EPYC 3255 8-Core Temp testing with a congatec conga-B7E3 (5.13 BIOS) and NVIDIA Quadro P1000 4GB on Ubuntu 20.04 via the Phoronix Test Suite.

### **Test Systems:**

**sysbench2004Ph10**

**graphics-magick2004Ph10**

**ipc-benchmark2004Ph10**

**amg2004Ph10**

**ramspeed2004PH1-**

**npb2004Ph10**

**scimark2004Ph10**

**cachebench2004Ph10**

**onednn2004Ph10**

**apache2004Ph10**

**ctx-clock2004Ph10**

**hackbench1004Ph10**

**mbw2004Ph10**

**openssl2004Ph10**

**perf-bench2004Ph10**

**stress-ng2004Ph10**

**schbench2004Ph10**

**t-test1-2004Ph10**

**tinymembench2004Ph10**

**openvino2004Ph10**

**opencv2004Ph10**

Processor: AMD EPYC 3255 8-Core Temp @ 2.50GHz (8 Cores / 16 Threads), Motherboard: congatec conga-B7E3 (5.13 BIOS), Chipset: AMD 17h, Memory: 32GB, Disk: 1920GB ATP NVMe M.2 2280 SED SSD + 2000GB Portable SSD T5, Graphics: NVIDIA Quadro P1000 4GB, Audio: NVIDIA GP107GL HD Audio, Monitor: HP Z24n G2, Network: Intel I210 + Intel I211 + 2 x AMD Device 1458 + 2 x AMD Device 1459

OS: Ubuntu 20.04, Kernel: 5.4.0-65-generic (x86\_64), Display Driver: nouveau, OpenGL: 4.5 Mesa 21.0.3 (LLVM 12.0.0 256 bits), Vulkan: 1.0.2, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1200

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 ondemand (Boost: Enabled) - CPU Microcode: 0x800126c

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/swaps barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling + srbds: Not affected + tsx\_async\_abort: Not affected

sys	gra	ipc-	am	ram	npb	sci	cac	one	apa	ctx-	hac	mb	ope	perf	stre	sch	t-te	tiny	ope	ope
ben	phi	ben	g20	spe	200	mar	heb	dnn	che	clo	kbe	w2	nss	-be	ss-	ben	st1-	me	nvi	ncv
ch2	cs-	ch	04P	ed2	4Ph	k20	enc	200	200	ck2	nch	004	l20	nch	ng2	ch2	200	mb	no2	200
004	ma	mar	h10	004	10	04P	h20	4Ph	4Ph	004	100	Ph1	04P	200	004	004	4Ph	enc	004	4Ph
Ph1	gic	k20		PH		h10	04P	10	10	Ph1	4Ph	0	h10	4Ph	Ph1	Ph1	10	h20	Ph1	10
0	k20	04P		1-			h10			0	10			10	0	0		04P	0	
	04P	h10																h10		

Sysbenc 713

h - RAM / 1

Memory

(MiB/sec

Standard 1.1%

Deviation

Sysbenc 122

h - CPU 24

(Events/

sec)

Standard 0.6%

Deviation

Graphics 308

Magick -

Swirl

(Iteration

s/min)

Standard 0.5%

Deviation

Graphics 510

Magick -

Rotate

(Iteration

s/min)

Standard 0.3%

Deviation

Graphics 88

Magick -

Sharpen

(Iteration

s/min)

Graphics 122

Magick -

Enhance

d

(Iteration

s/min)

<b>Graphics</b>	622
<b>Magick - Resizing (Iteration s/min)</b>	
Standard	0.1%
Deviation	
<b>Graphics</b>	158
<b>Magick - Noise-Gaussian (Iteration s/min)</b>	
Standard	0.4%
Deviation	
<b>Graphics</b>	715
<b>Magick - HWB Color Space (Iteration s/min)</b>	
Standard	0.2%
Deviation	
<b>IPC_benchmark - TCP Socket - 128 (Messages/sec)</b>	188
Standard	723
Deviation	9
<b>IPC_benchmark - TCP Socket - 1024 (Messages/sec)</b>	
Standard	0.1%
Deviation	
<b>IPC_benchmark - TCP Socket - 1024 (Messages/sec)</b>	130
Standard	540
Deviation	0
<b>IPC_benchmark - TCP Socket - 1024 (Messages/sec)</b>	
Standard	0.2%
Deviation	

IPC_ben	196
chmark -	647
Unname	0
d Pipe -	
128	
(Messag	
es/sec)	
Standard	0.9%
Deviation	
IPC_ben	158
chmark -	977
Unname	8
d Pipe -	
1024	
(Messag	
es/sec)	
Standard	0.8%
Deviation	
IPC_ben	188
chmark -	329
FIFO	5
Named	
Pipe -	
128	
(Messag	
es/sec)	
Standard	2.1%
Deviation	
IPC_ben	147
chmark -	638
FIFO	4
Named	
Pipe -	
1024	
(Messag	
es/sec)	
Standard	0.3%
Deviation	
IPC_ben	124
chmark -	955
U.U.D.S -	2
128	
(Messag	
es/sec)	
Standard	1.5%
Deviation	

IPC_ben	922
chmark -	138
U.U.D.S -	
1024	
(Messag	
es/sec)	
Standard	2%
Deviation	
Algebrai	178
c	649
Multi-Gri	867
d	
Benchm	
Standard	0.1%
Deviation	
RAMspe	207
ed SMP -	21
Add -	
Integer	
(MB/s)	
Standard	0.1%
Deviation	
RAMspe	171
ed SMP -	15
Scale -	
Integer	
(MB/s)	
Standard	1.3%
Deviation	
RAMspe	182
ed SMP -	96
Average	
- Integer	
(MB/s)	
Standard	0.5%
Deviation	
RAMspe	210
ed SMP -	40
Add -	
Floating	
Point	
(MB/s)	
Standard	0.2%
Deviation	

RAMspe	161
ed SMP -	19
Scale -	
Floating	
Point	
(MB/s)	
Standard	0.5%
Deviation	
RAMspe	185
ed SMP -	56
Average	
-	
Floating	
Point	
Standard	0.2%
Deviation	
NAS	384
Parallel	.06
Benchm	
arks -	
EP.C	
(Mop/s)	
Standard	0.7%
Deviation	
NAS	382
Parallel	.85
Benchm	
arks -	
EP.D	
(Mop/s)	
Standard	2.1%
Deviation	
SciMark	417
-	.27
Composi	
te	
Standard	1.2%
Deviation	
SciMark	100
- Monte	.33
Carlo	
(Mflops)	
Standard	0.2%
Deviation	
SciMark	135
- F.F.T	.04
(Mflops)	
Standard	1.1%
Deviation	

<b>SciMark</b>	451
- S.M.M	.72
<b>(Mflops)</b>	
Standard	0.4%
Deviation	
<b>SciMark</b>	539
- D.L.M.F	.42
<b>(Mflops)</b>	
Standard	9.2%
Deviation	
<b>SciMark</b>	859
- J.S.O.R	.83
<b>(Mflops)</b>	
Standard	3.2%
Deviation	
<b>CacheBe</b>	214
nch -	5
Read	
<b>(MB/s)</b>	
Standard	0%
Deviation	
<b>CacheBe</b>	174
nch -	16
Write	
<b>(MB/s)</b>	
Standard	0.3%
Deviation	
<b>CacheBe</b>	303
nch -	69
R.M.W	
<b>(MB/s)</b>	
Standard	1.1%
Deviation	
<b>oneDNN</b>	11.
- IP	157
Shapes	2
1D - f32 -	
CPU	
Standard	0.1%
Deviation	
<b>oneDNN</b>	14.
- IP	010
Shapes	3
3D - f32 -	
CPU	
Standard	0.1%
Deviation	

oneDNN	9.7
- IP	303
Shapes	0
1D -	
u8s8f32 -	
CPU	
Standard	0.1%
Deviation	
oneDNN	3.5
- IP	859
Shapes	4
3D -	
u8s8f32 -	
CPU	
Standard	0%
Deviation	
oneDNN	23.
- C.B.S.A	780
- f32 -	0
CPU	
Standard	0.1%
Deviation	
oneDNN	14.
- D.B.s -	333
f32 -	3
CPU	
Standard	0.6%
Deviation	
oneDNN	21.
- D.B.s -	082
f32 -	0
CPU	
Standard	2.4%
Deviation	
oneDNN	27.
- C.B.S.A	215
- u8s8f32	2
- CPU	
(ms)	
Standard	0.5%
Deviation	
oneDNN	10.
- D.B.s -	070
u8s8f32 -	2
CPU	
Standard	0.2%
Deviation	

oneDNN	13.
- D.B.s -	883
u8s8f32 -	4
CPU	
Standard	2.5%
Deviation	
oneDNN	107
- R.N.N.T	08
- f32 -	
CPU	
Standard	0.5%
Deviation	
oneDNN	591
- R.N.N.I	6
- f32 -	
CPU	
Standard	0.2%
Deviation	
oneDNN	107
- R.N.N.T	85
- u8s8f32	
- CPU	
(ms)	
Standard	0.2%
Deviation	
oneDNN	589
- R.N.N.I	9
- u8s8f32	
- CPU	
(ms)	
Standard	0.3%
Deviation	
oneDNN	6.3
-	481
M.M.B.S.	1
T - f32 -	
CPU	
Standard	0%
Deviation	
oneDNN	107
- R.N.N.T	80
-	
bf16bf16	
bf16 -	
CPU	
Standard	0.4%
Deviation	

oneDNN	592	
- R.N.N.I	9	
-		
bf16bf16		
bf16 -		
CPU		
Standard	0.3%	
Deviation		
oneDNN	6.5	
-	918	
M.M.B.S.	4	
T -		
u8s8f32 -		
CPU		
Standard	0.1%	
Deviation		
Apache	207	
Benchm	82	
ark -		
S.W.P.S		
(Reqs/se		
c)		
Standard	0.2%	
Deviation		
ctx_cloc	175	
k - C.S.T		
(Clocks)		
Hackben		76.
ch - 16 -		578
Thread		
(sec)		
Standard		1.3%
Deviation		
Hackben		69.
ch - 16 -		547
Process		
(sec)		
Standard		5.6%
Deviation		
MBW -		113
Memory		77
Copy -		
1024 MiB		
(MiB/s)		
Standard		0.6%
Deviation		

<b>MBW -</b>	599
<b>M.C.F.B.</b>	5
<b>S - 1024</b>	
<b>MiB</b>	
<b>(MiB/s)</b>	
Standard	0.3%
Deviation	
<b>OpenSS</b>	119
<b>L -</b>	2
<b>R.4.b.P</b>	
<b>(Signs/s)</b>	
Standard	0.3%
Deviation	
<b>perf-ben</b>	611
<b>ch -</b>	41
<b>Epoll</b>	
<b>Wait</b>	
Standard	0.3%
Deviation	
<b>perf-ben</b>	377
<b>ch -</b>	510
<b>Futex</b>	7
<b>Hash</b>	
Standard	0.1%
Deviation	
<b>perf-ben</b>	13.
<b>ch -</b>	475
<b>Memcpy</b>	792
<b>1MB</b>	
<b>(GB/sec)</b>	
Standard	0.6%
Deviation	
<b>perf-ben</b>	30.
<b>ch -</b>	002
<b>Memset</b>	033
<b>1MB</b>	
<b>(GB/sec)</b>	
Standard	1.8%
Deviation	
<b>perf-ben</b>	337
<b>ch -</b>	65
<b>Sched</b>	
<b>Pipe</b>	
Standard	2.9%
Deviation	

perf-ben	841
ch -	
Futex	
Lock-Pi	
Standard	0.5%
Deviation	
perf-ben	130
ch -	071
Syscall	64
Basic	
(ops/sec)	
Standard	2.4%
Deviation	
Stress-N	40.
G -	45
MMAP	
(Bogo	
Ops/s)	
Standard	9.6%
Deviation	
Stress-N	129
G -	.56
NUMA	
(Bogo	
Ops/s)	
Standard	1.2%
Deviation	
Stress-N	459
G -	.93
MEMFD	
(Bogo	
Ops/s)	
Standard	0.9%
Deviation	
Stress-N	234
G -	591
Atomic	
(Bogo	
Ops/s)	
Standard	0.1%
Deviation	
Stress-N	136
G -	7
Crypto	
(Bogo	
Ops/s)	
Standard	0.1%
Deviation	

<b>Stress-N</b>	345
<b>G -</b>	001
<b>Malloc</b>	14
<b>(Bogo</b>	
<b>Ops/s)</b>	
Standard	0.2%
Deviation	
<b>Stress-N</b>	459
<b>G -</b>	88
<b>Forking</b>	
<b>(Bogo</b>	
<b>Ops/s)</b>	
Standard	1%
Deviation	
<b>Stress-N</b>	963
<b>G -</b>	22
<b>SENFIL</b>	
<b>E (Bogo</b>	
<b>Ops/s)</b>	
Standard	0.1%
Deviation	
<b>Stress-N</b>	18.
<b>G - CPU</b>	35
<b>Cache</b>	
<b>(Bogo</b>	
<b>Ops/s)</b>	
Standard	1.8%
Deviation	
<b>Stress-N</b>	231
<b>G - CPU</b>	2
<b>Stress</b>	
<b>(Bogo</b>	
<b>Ops/s)</b>	
Standard	0%
Deviation	
<b>Stress-N</b>	139
<b>G -</b>	680
<b>Semaph</b>	6
<b>ores</b>	
<b>(Bogo</b>	
Standard	0.1%
Deviation	

<b>Stress-N</b>	286
<b>G -</b>	76
<b>Matrix</b>	
<b>Math</b>	
<b>(Bogo</b>	
Standard	0.3%
Deviation	
<b>Stress-N</b>	497
<b>G -</b>	39
<b>Vector</b>	
<b>Math</b>	
<b>(Bogo</b>	
Ops/s)	
Standard	0.1%
Deviation	
<b>Stress-N</b>	103
<b>G -</b>	7
<b>Memory</b>	
<b>Copying</b>	
<b>(Bogo</b>	
Ops/s)	
Standard	0.1%
Deviation	
<b>Stress-N</b>	459
<b>G -</b>	5
<b>Socket</b>	
<b>Activity</b>	
<b>(Bogo</b>	
Ops/s)	
Standard	0.7%
Deviation	
<b>Stress-N</b>	271
<b>G -</b>	518
<b>Context</b>	1
<b>Switchin</b>	
<b>g (Bogo</b>	
Ops/s)	
Standard	22.3
Deviation	%
<b>Stress-N</b>	644
<b>G -</b>	776
<b>G.C.S.F</b>	
<b>(Bogo</b>	
Ops/s)	
Standard	1.8%
Deviation	

Stress-N	94.
G -	75
G.Q.D.S	
(Bogo	
Ops/s)	
Standard	0.9%
Deviation	
Stress-N	836
G -	578
S.V.M.P	8
(Bogo	
Ops/s)	
Standard	1.9%
Deviation	
Schbench	104
h - 8 - 16	747
(usec,	
99.9th	
Latency	
Percentil	
e)	
Standard	1.1%
Deviation	
t-test1 -	51.
1 (sec)	672
Standard	0.7%
Deviation	
t-test1 -	14.
2 (sec)	527
Standard	1.1%
Deviation	
Tinymem	118
bench -	47
Standard	
Memcpy	
(MB/s)	
Standard	0.8%
Deviation	
Tinymem	782
bench -	8
Standard	
Memset	
(MB/s)	
Standard	0.8%
Deviation	

OpenVIN	0.8
O -	3
F.D.0.F -	
CPU	
(FPS)	
Standard	0.7%
Deviation	
OpenVIN	482
O -	5
F.D.0.F -	
CPU	
Standard	0.2%
Deviation	
OpenVIN	0.8
O -	2
F.D.0.F -	
CPU	
(FPS)	
Standard	0.7%
Deviation	
OpenVIN	487
O -	5
F.D.0.F -	
CPU	
Standard	0.8%
Deviation	
OpenVIN	0.5
O -	4
P.D.0.F -	
CPU	
(FPS)	
Standard	1.1%
Deviation	
OpenVIN	731
O -	8
P.D.0.F -	
CPU	
Standard	0.3%
Deviation	
OpenVIN	0.5
O -	4
P.D.0.F -	
CPU	
(FPS)	
Standard	0%
Deviation	

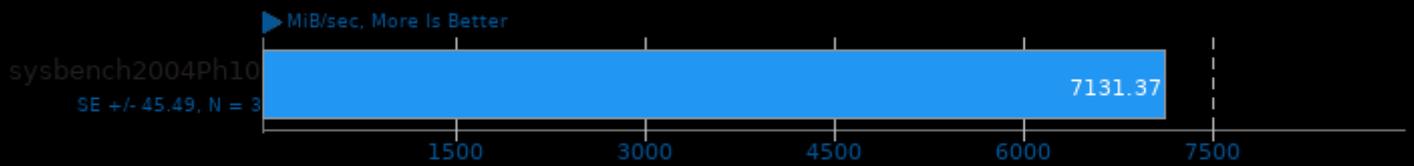
OpenVIN	736
O -	1
P.D.O.F -	
CPU	
Standard	0.5%
Deviation	
OpenVIN	228
O -	5
A.G.R.R.	
O.F -	
CPU	
(FPS)	
Standard	0.6%
Deviation	
OpenVIN	1.7
O -	2
A.G.R.R.	
O.F -	
CPU	
Standard	0.3%
Deviation	
OpenVIN	228
O -	4
A.G.R.R.	
O.F -	
CPU	
(FPS)	
Standard	0.6%
Deviation	
OpenVIN	1.7
O -	2
A.G.R.R.	
O.F -	
CPU	
Standard	0.3%
Deviation	
OpenCV	342
-	622
Features	
2D (ms)	
Standard	0.8%
Deviation	
OpenCV	172
- Object	830
Detectio	
n (ms)	
Standard	6.7%
Deviation	

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<b>OpenCV</b>	208
- DNN -	39
D.N.N	
(ms)	
Standard	9%
Deviation	

## Sysbench 1.0.20

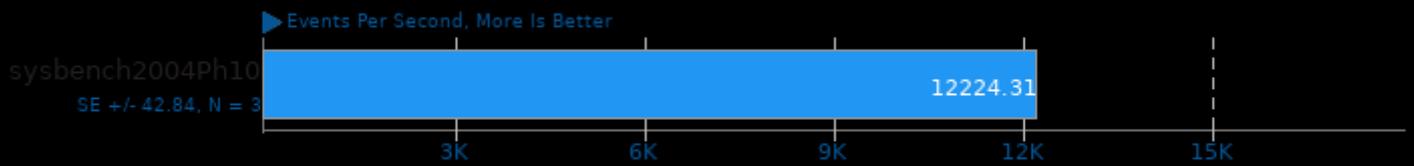
Test: RAM / Memory



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

## Sysbench 1.0.20

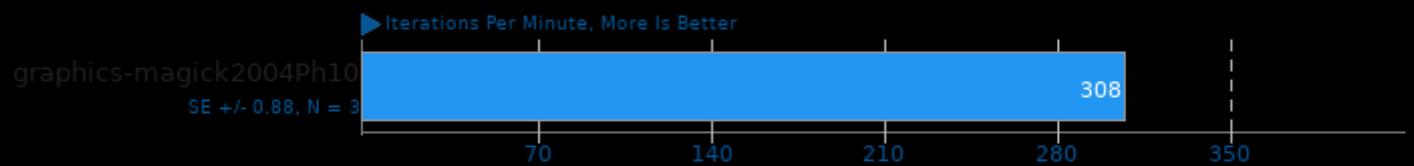
Test: CPU



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

## GraphicsMagick 1.3.33

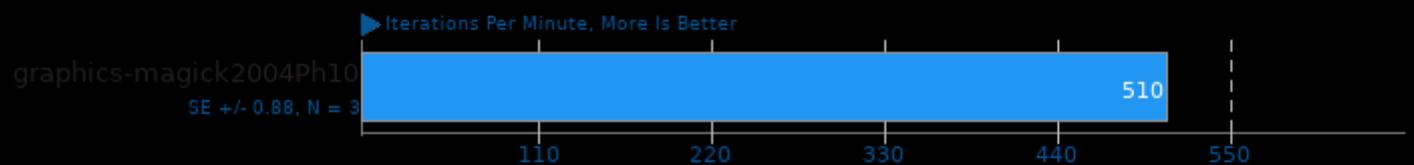
Operation: Swirl



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lz -lm -lpthread

## GraphicsMagick 1.3.33

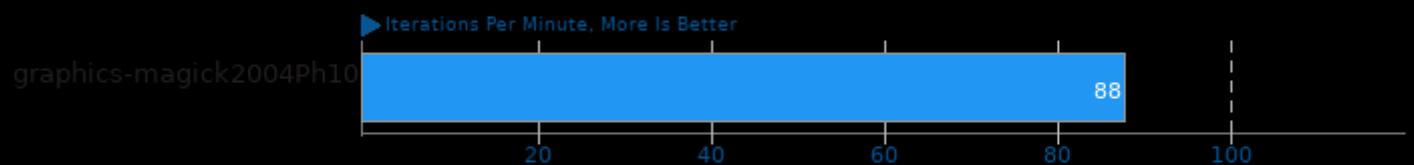
Operation: Rotate



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lz -lm -lpthread

## GraphicsMagick 1.3.33

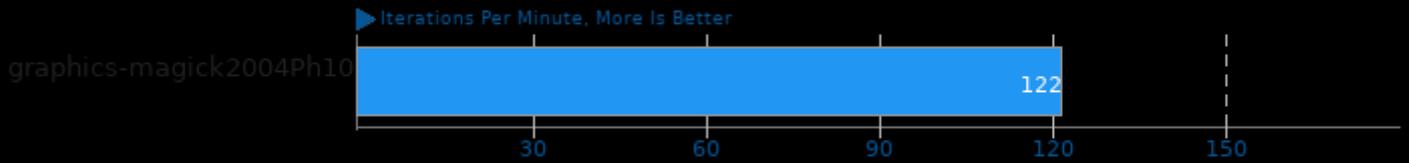
Operation: Sharpen



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lz -lm -lpthread

## GraphicsMagick 1.3.33

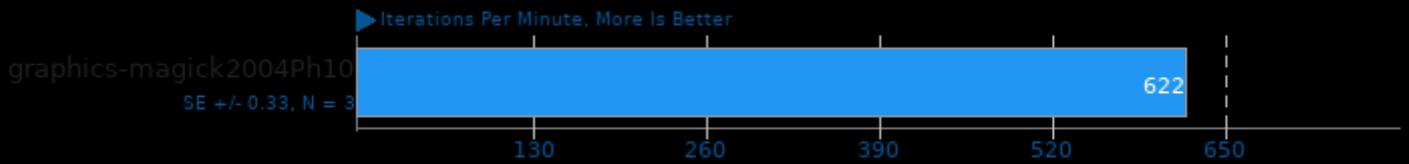
Operation: Enhanced



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lz -lm -lpthread

## GraphicsMagick 1.3.33

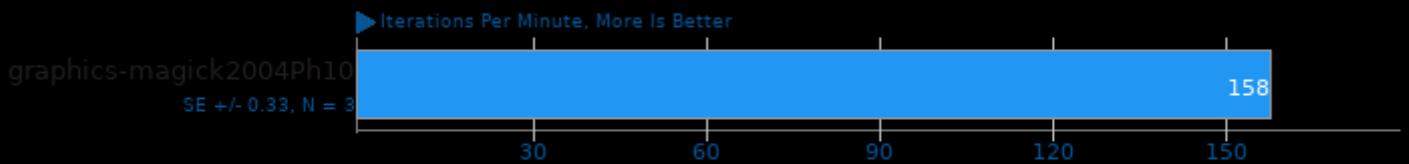
Operation: Resizing



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lz -lm -lpthread

## GraphicsMagick 1.3.33

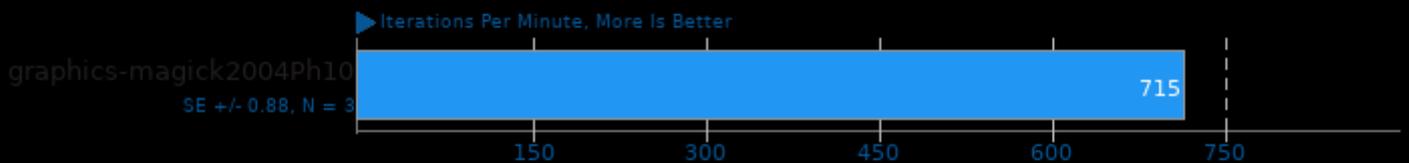
Operation: Noise-Gaussian



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lz -lm -lpthread

## GraphicsMagick 1.3.33

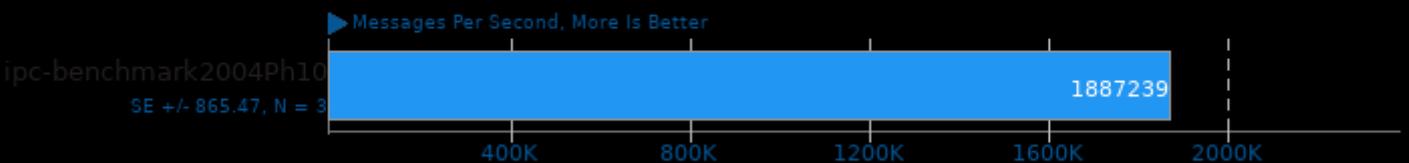
Operation: HWB Color Space



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lz -lm -lpthread

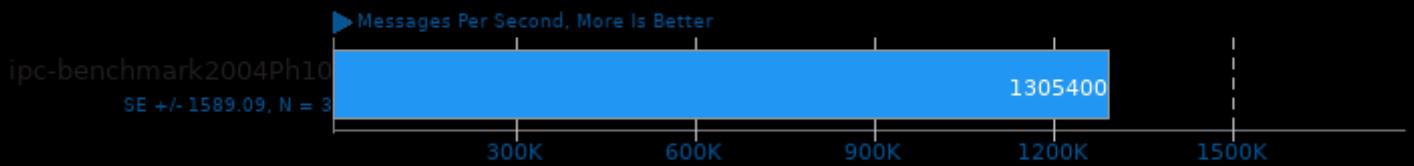
## IPC\_benchmark

Type: TCP Socket - Message Bytes: 128



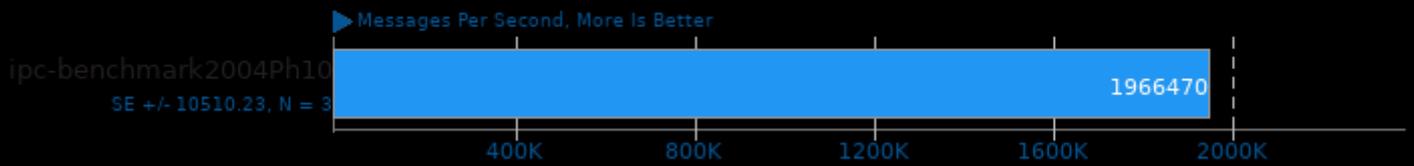
### IPC\_benchmark

Type: TCP Socket - Message Bytes: 1024



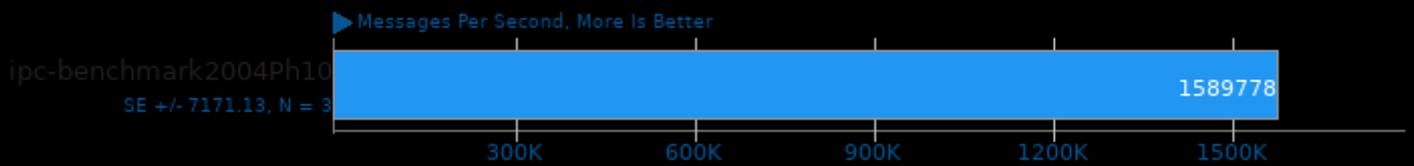
### IPC\_benchmark

Type: Unnamed Pipe - Message Bytes: 128



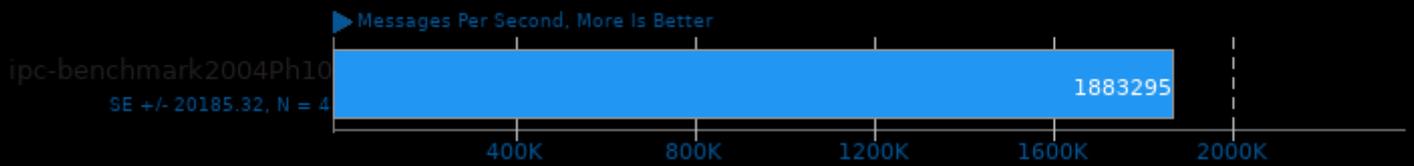
### IPC\_benchmark

Type: Unnamed Pipe - Message Bytes: 1024



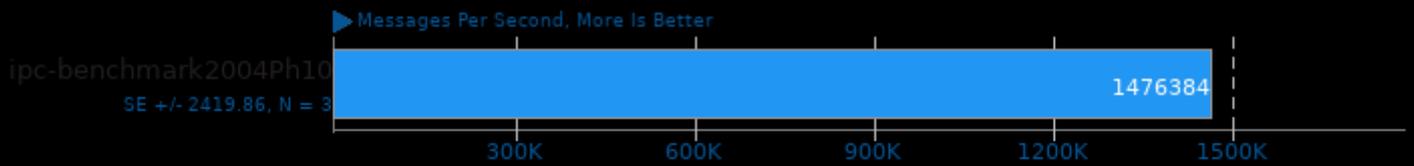
### IPC\_benchmark

Type: FIFO Named Pipe - Message Bytes: 128



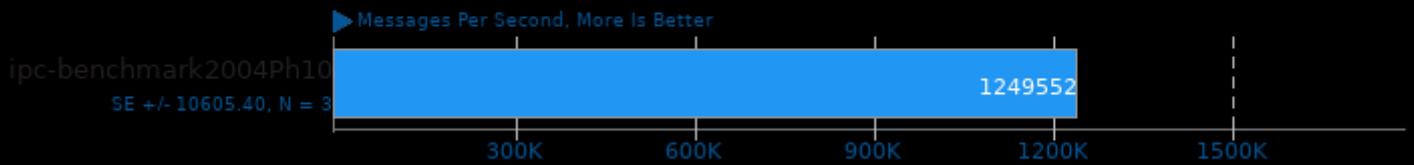
### IPC\_benchmark

Type: FIFO Named Pipe - Message Bytes: 1024



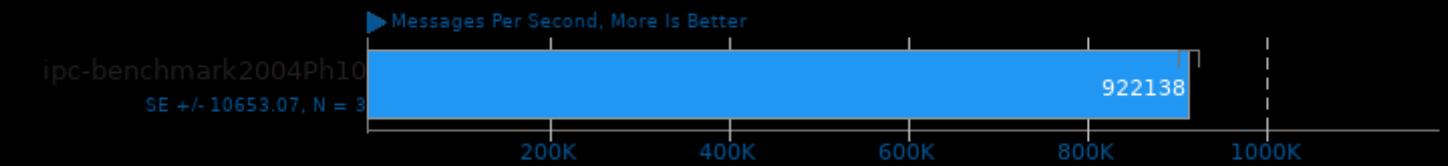
### IPC\_benchmark

Type: Unnamed Unix Domain Socket - Message Bytes: 128



### IPC\_benchmark

Type: Unnamed Unix Domain Socket - Message Bytes: 1024



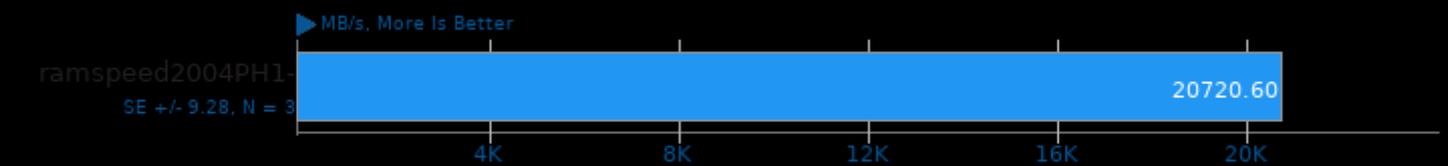
### Algebraic Multi-Grid Benchmark 1.2



1, (CC) gcc options: -lparcsr\_ls -lparcsr\_mv -lseq\_mv -llj\_mv -lkrylov -lHYPRE\_utilities -lm -fopenmp -pthread -lmpi

### RAMspeed SMP 3.5.0

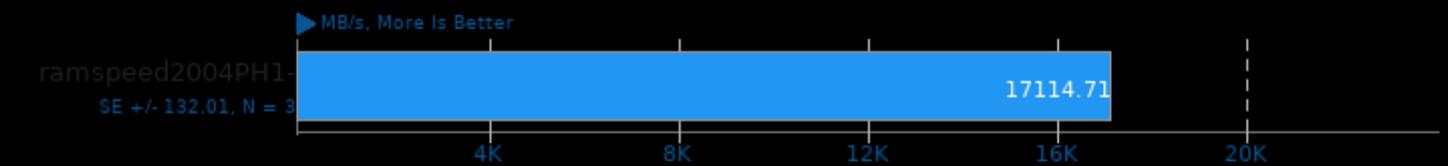
Type: Add - Benchmark: Integer



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

### RAMspeed SMP 3.5.0

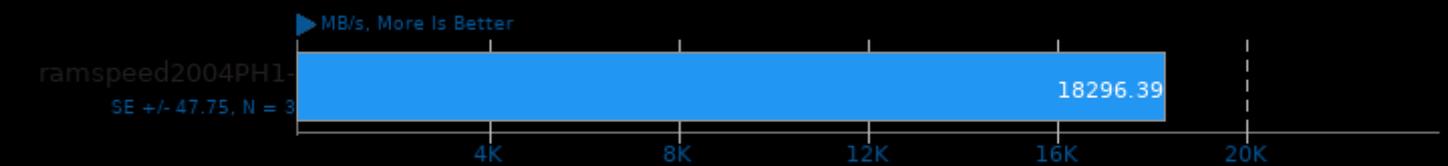
Type: Scale - Benchmark: Integer



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

### RAMspeed SMP 3.5.0

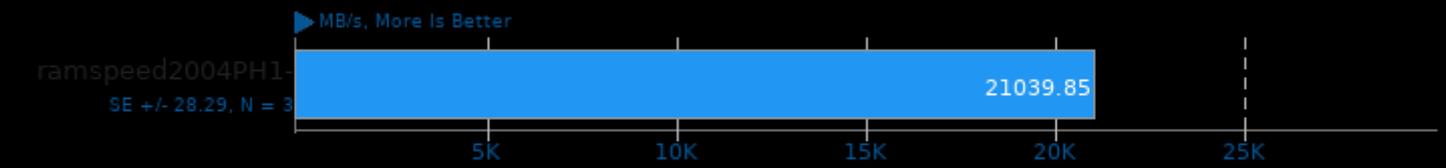
Type: Average - Benchmark: Integer



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

### RAMspeed SMP 3.5.0

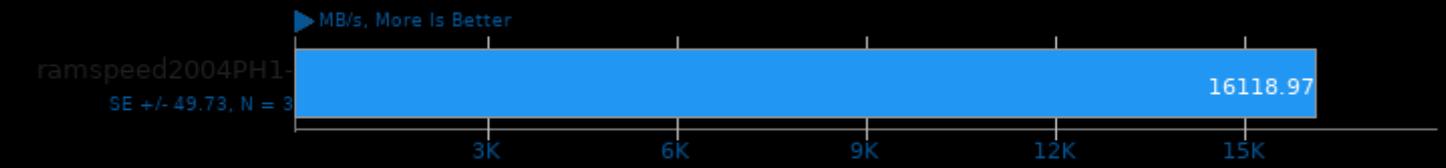
Type: Add - Benchmark: Floating Point



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

### RAMspeed SMP 3.5.0

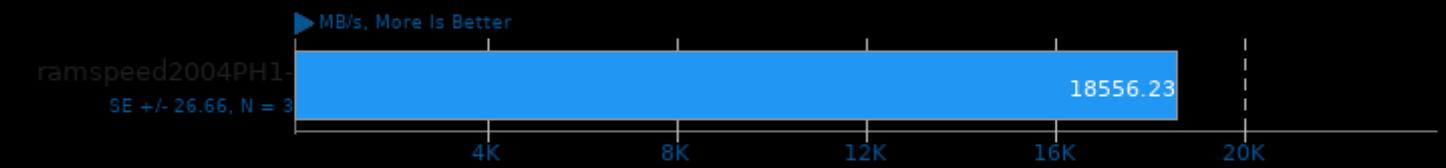
Type: Scale - Benchmark: Floating Point



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

### RAMspeed SMP 3.5.0

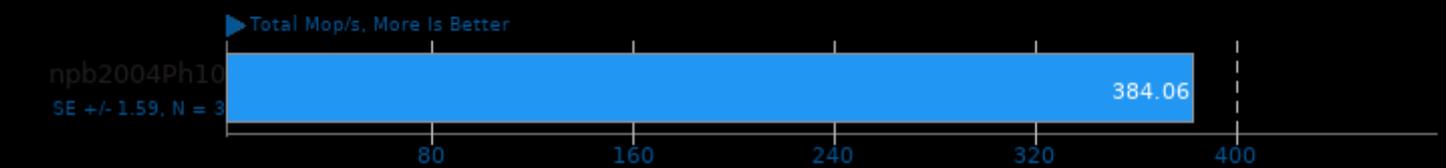
Type: Average - Benchmark: Floating Point



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

### NAS Parallel Benchmarks 3.4

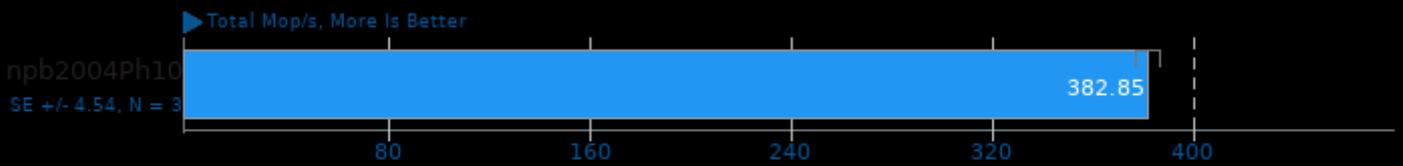
Test / Class: EP.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpi fh -lmpi  
2. Open MPI 4.0.3

## NAS Parallel Benchmarks 3.4

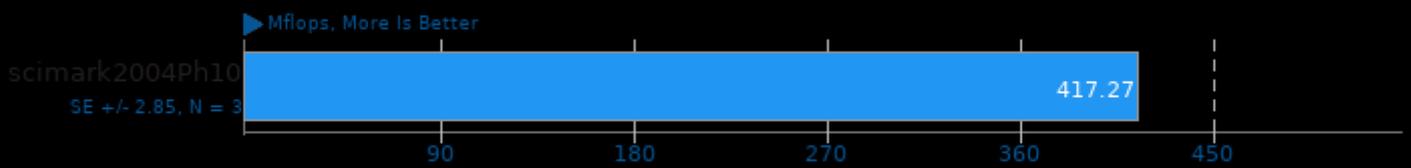
Test / Class: EP.D



- 1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpi fh -lmpi
- 2. Open MPI 4.0.3

## SciMark 2.0

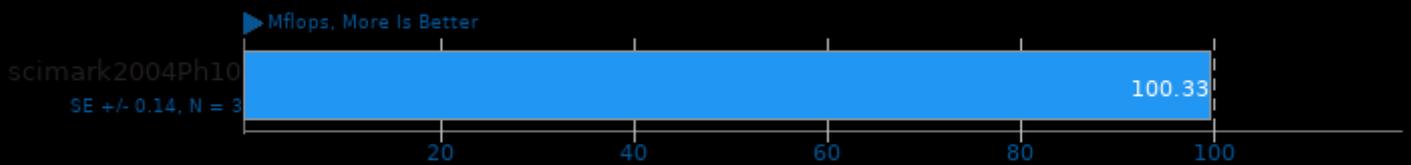
Computational Test: Composite



- 1. (CC) gcc options: -lm

## SciMark 2.0

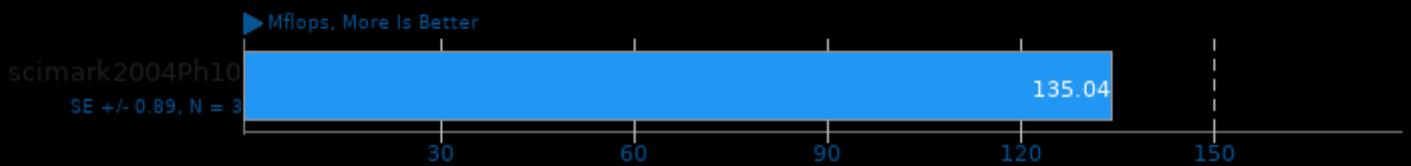
Computational Test: Monte Carlo



- 1. (CC) gcc options: -lm

## SciMark 2.0

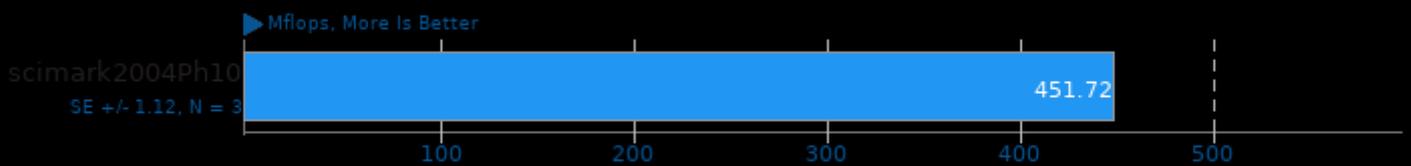
Computational Test: Fast Fourier Transform



- 1. (CC) gcc options: -lm

## SciMark 2.0

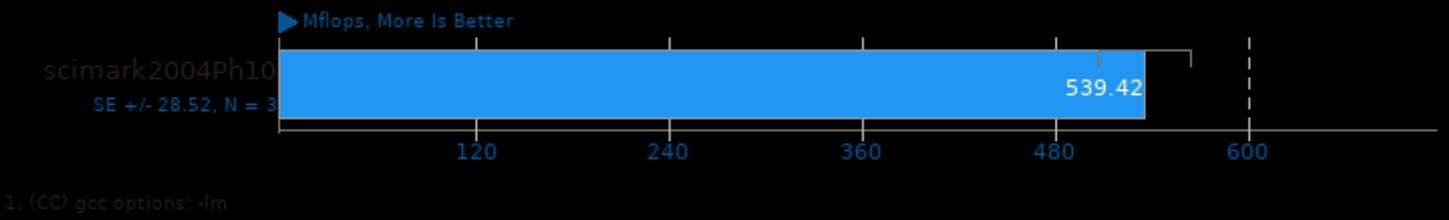
Computational Test: Sparse Matrix Multiply



- 1. (CC) gcc options: -lm

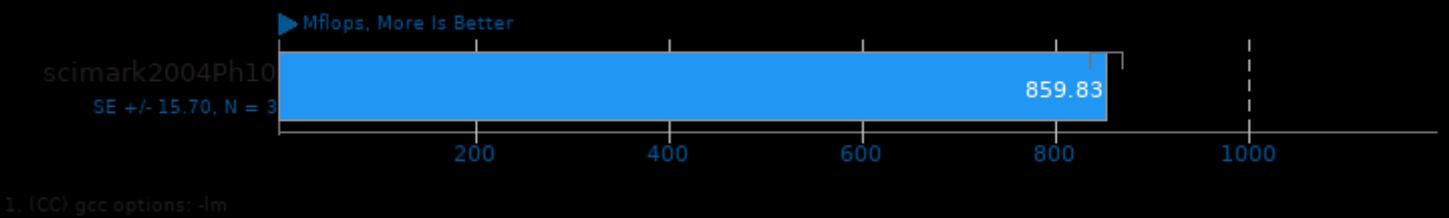
## SciMark 2.0

Computational Test: Dense LU Matrix Factorization



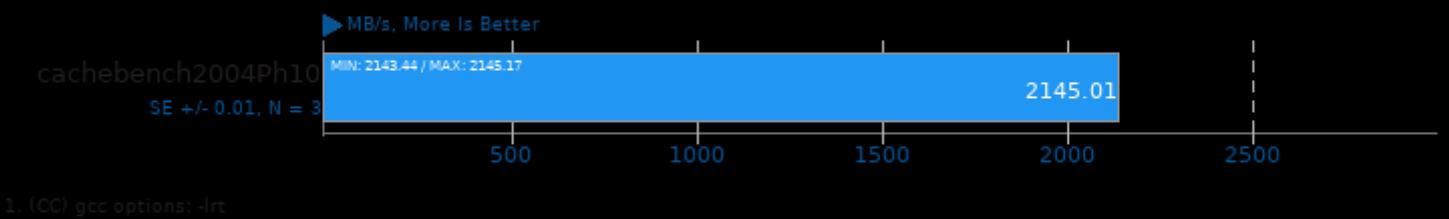
## SciMark 2.0

Computational Test: Jacobi Successive Over-Relaxation



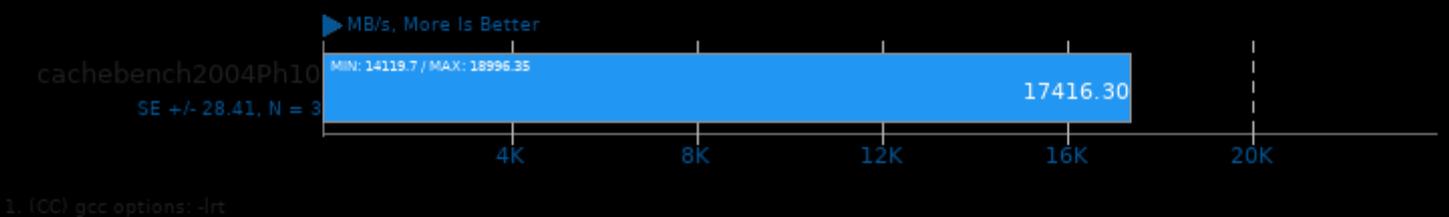
## CacheBench

Test: Read



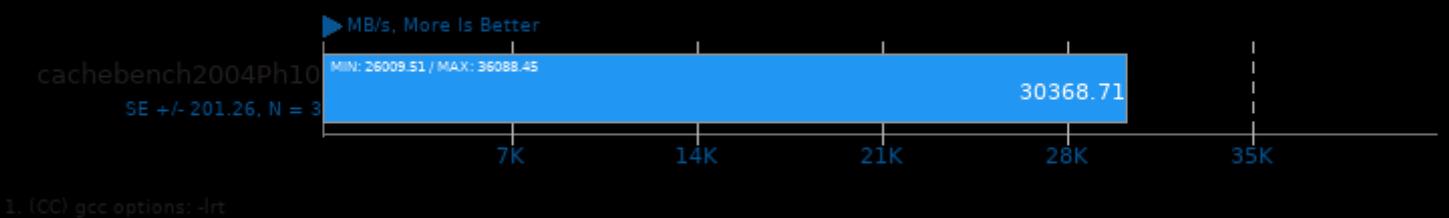
## CacheBench

Test: Write



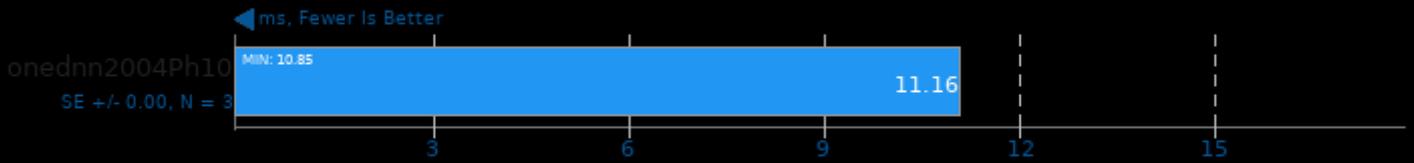
## CacheBench

Test: Read / Modify / Write



### oneDNN 2.1.2

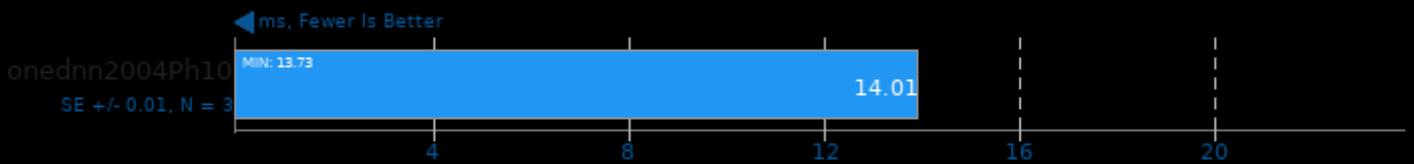
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



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

### oneDNN 2.1.2

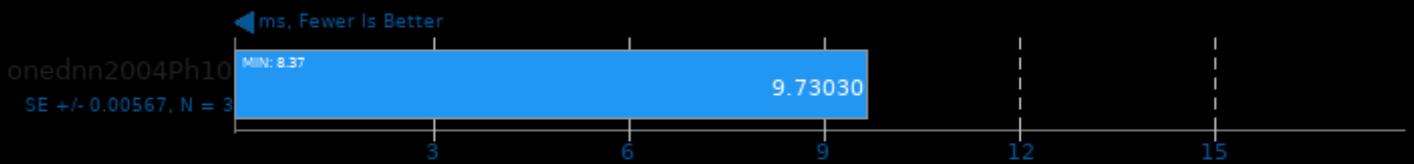
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



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

### oneDNN 2.1.2

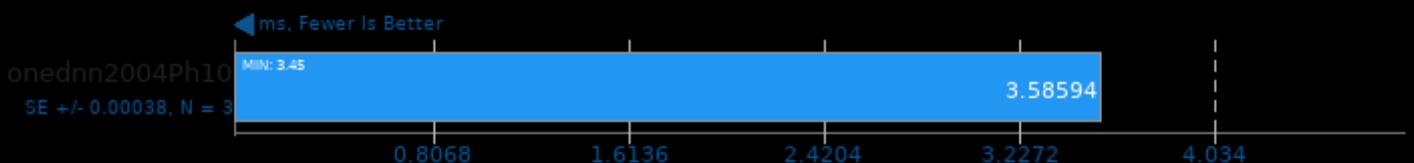
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.1.2

Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.1.2

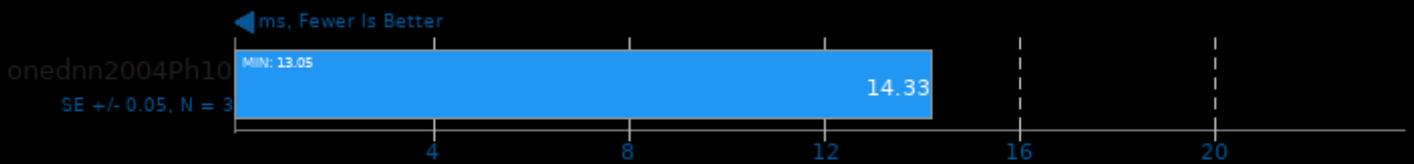
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

### oneDNN 2.1.2

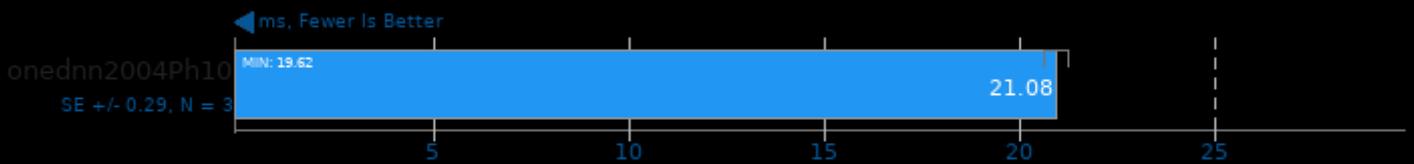
Harness: Deconvolution Batch shapes\_1d - Data Type: f32 - Engine: CPU



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

### oneDNN 2.1.2

Harness: Deconvolution Batch shapes\_3d - Data Type: f32 - Engine: CPU



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

### oneDNN 2.1.2

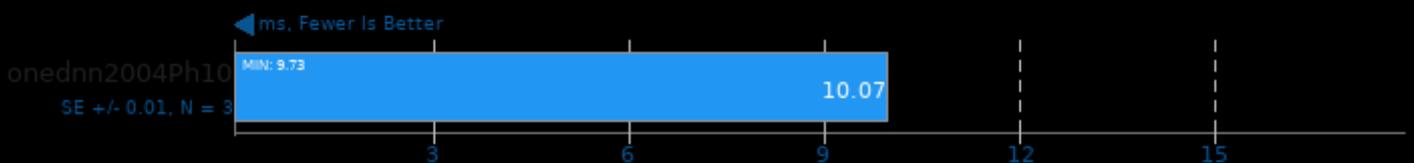
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.1.2

Harness: Deconvolution Batch shapes\_1d - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.1.2

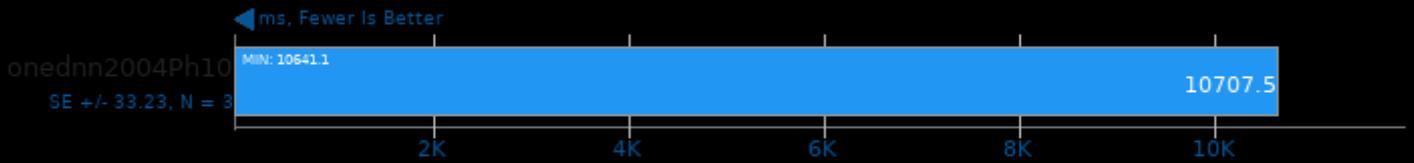
Harness: Deconvolution Batch shapes\_3d - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.1.2

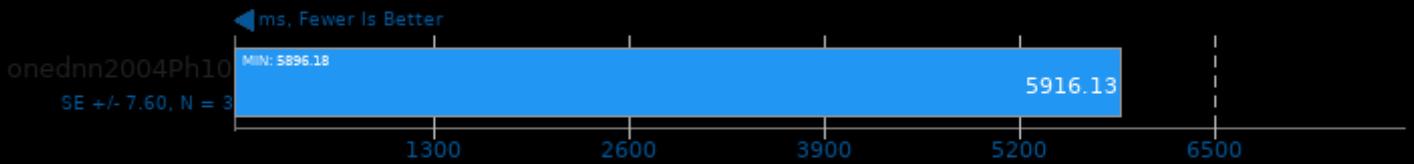
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

### oneDNN 2.1.2

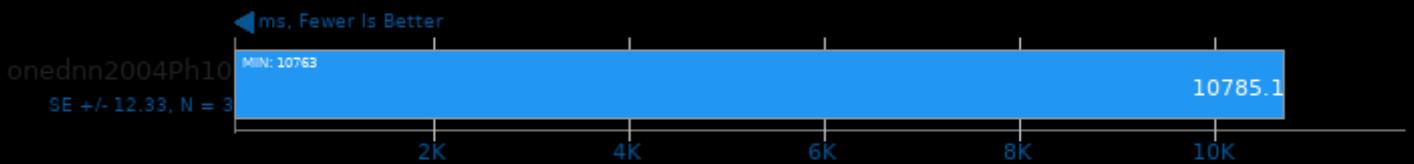
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

### oneDNN 2.1.2

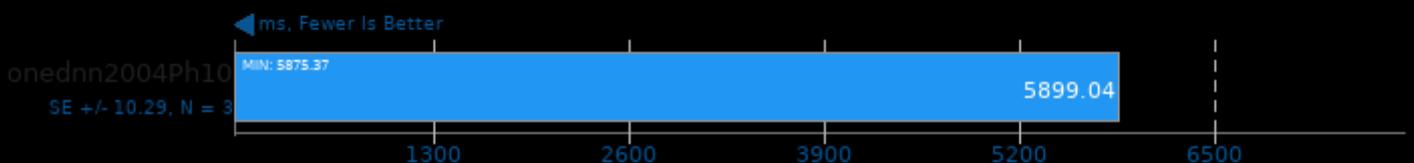
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.1.2

Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.1.2

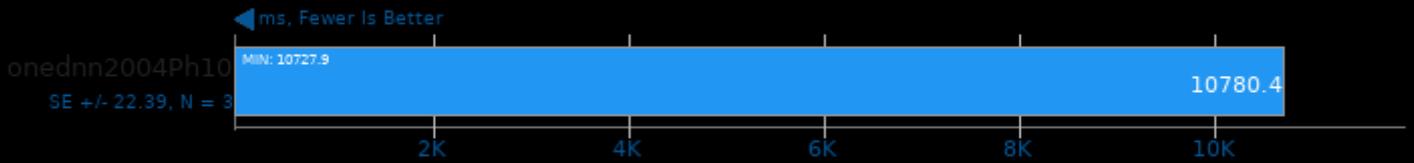
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU



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

### oneDNN 2.1.2

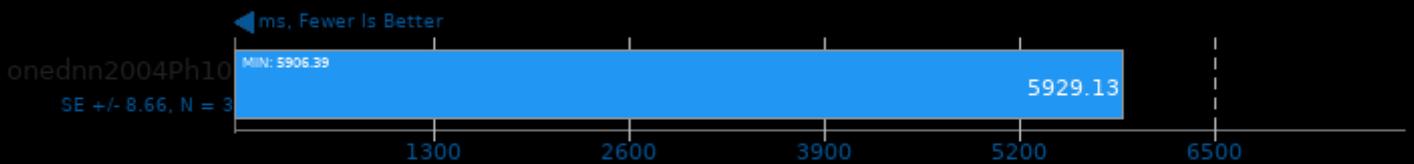
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU



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

### oneDNN 2.1.2

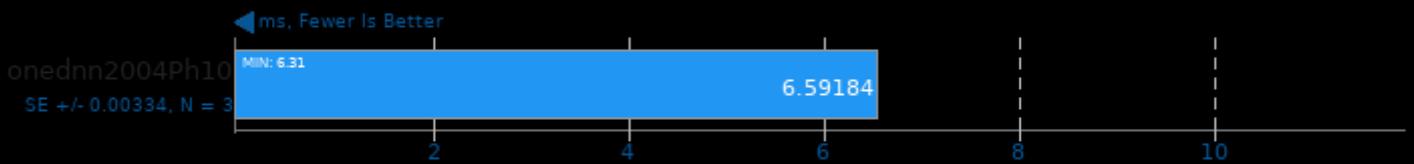
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



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

### oneDNN 2.1.2

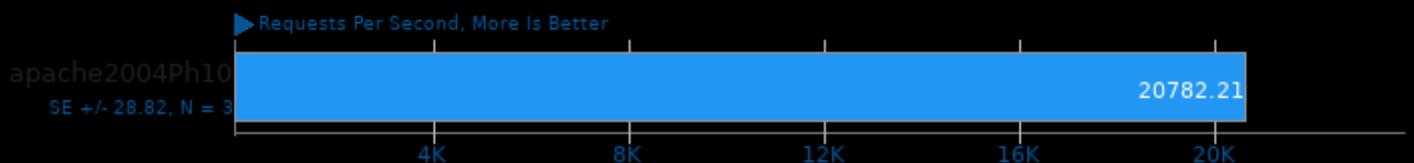
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



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

### Apache Benchmark 2.4.29

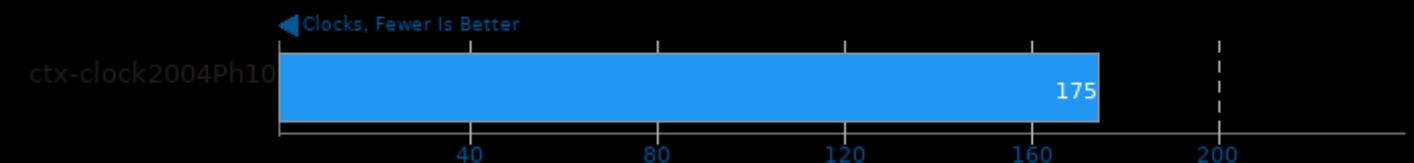
Static Web Page Serving



1. (CC) gcc options: -shared -fPIC -O2 -pthread

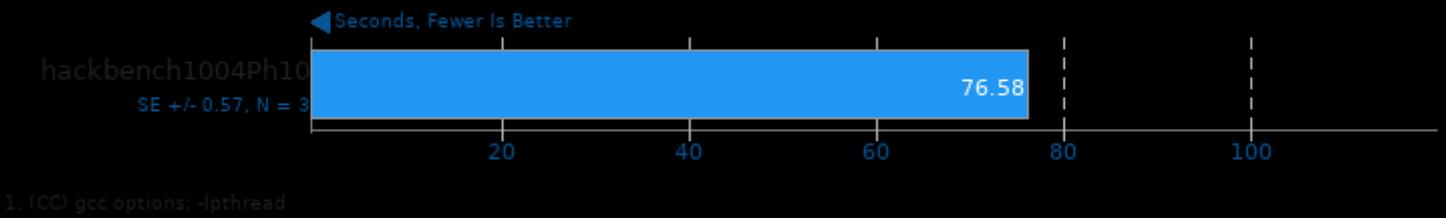
### ctx\_clock

Context Switch Time



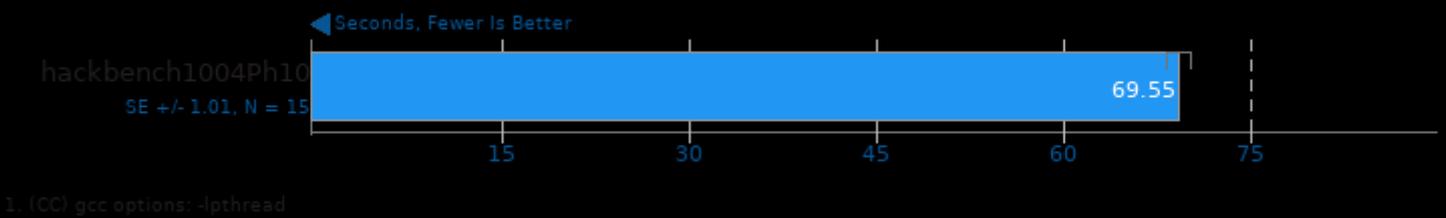
## Hackbench

Count: 16 - Type: Thread



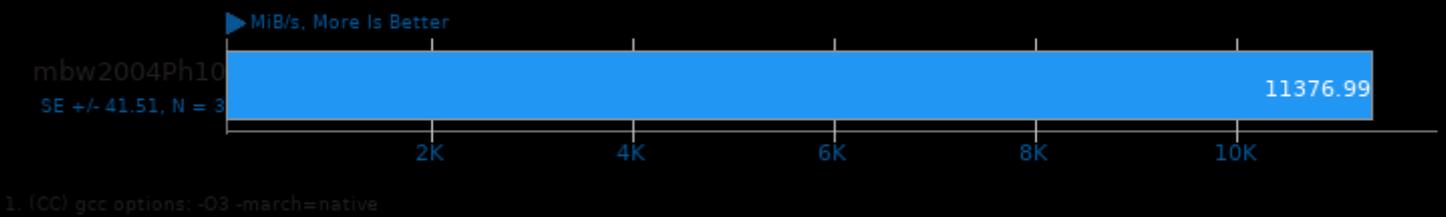
## Hackbench

Count: 16 - Type: Process



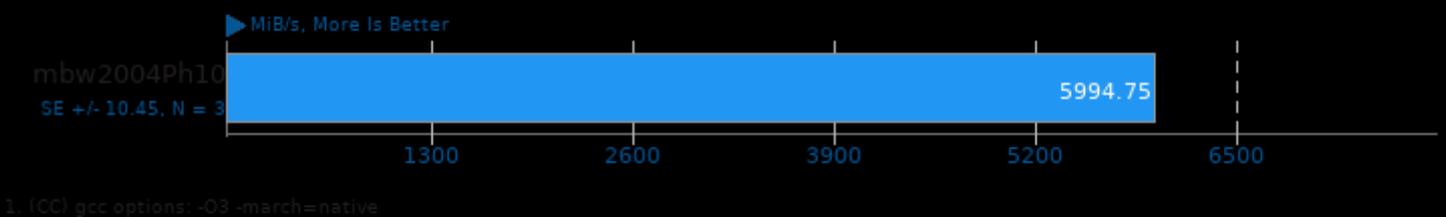
## MBW 2018-09-08

Test: Memory Copy - Array Size: 1024 MiB



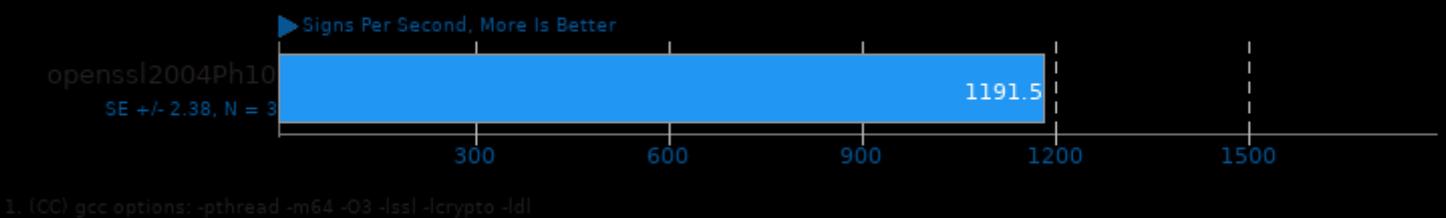
## MBW 2018-09-08

Test: Memory Copy, Fixed Block Size - Array Size: 1024 MiB



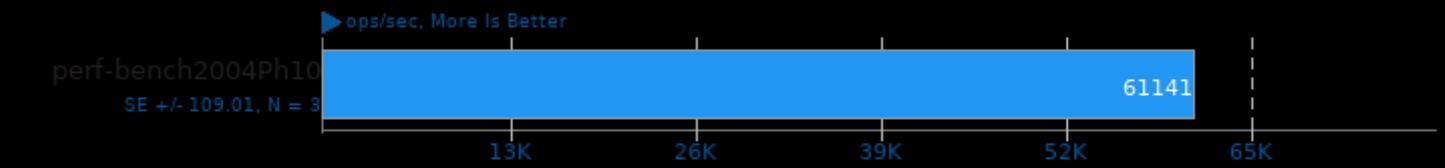
## OpenSSL 1.1.1

RSA 4096-bit Performance



### perf-bench

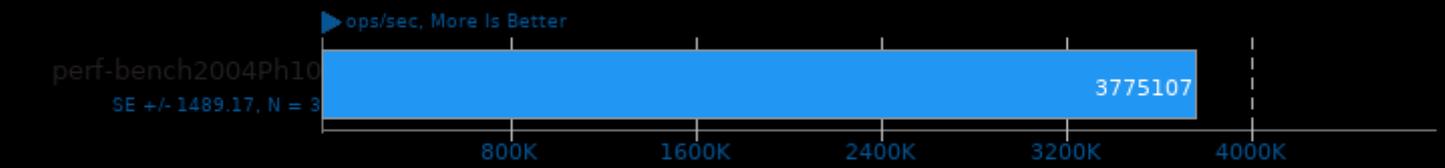
Benchmark: Epoll Wait



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lcrypto -lz -lnuma

### perf-bench

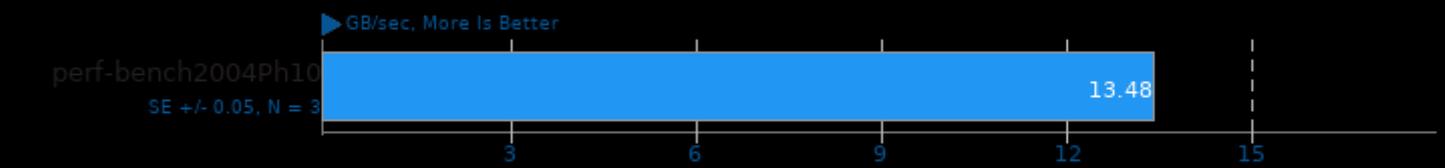
Benchmark: Futex Hash



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lcrypto -lz -lnuma

### perf-bench

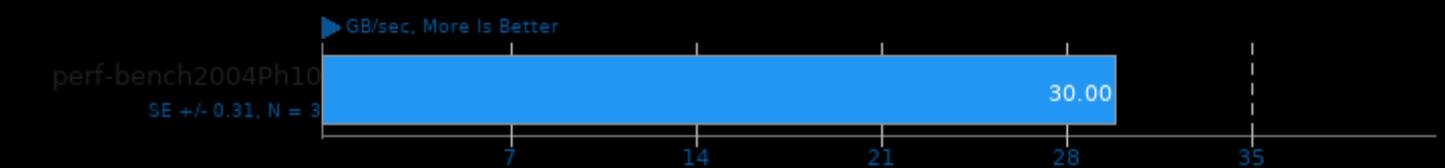
Benchmark: Malloc 1MB



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lcrypto -lz -lnuma

### perf-bench

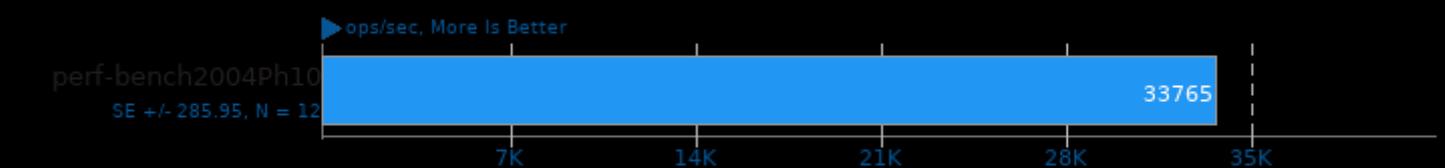
Benchmark: Memset 1MB



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lcrypto -lz -lnuma

### perf-bench

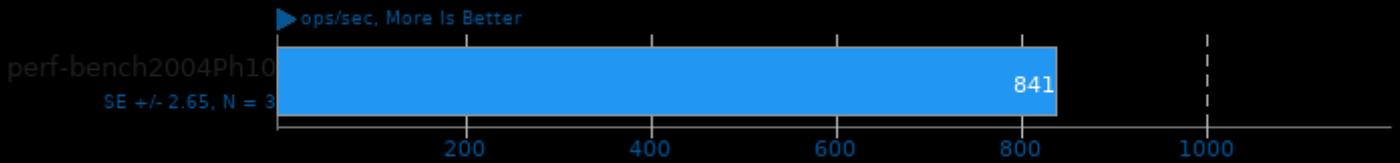
Benchmark: Sched Pipe



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lcrypto -lz -lnuma

### perf-bench

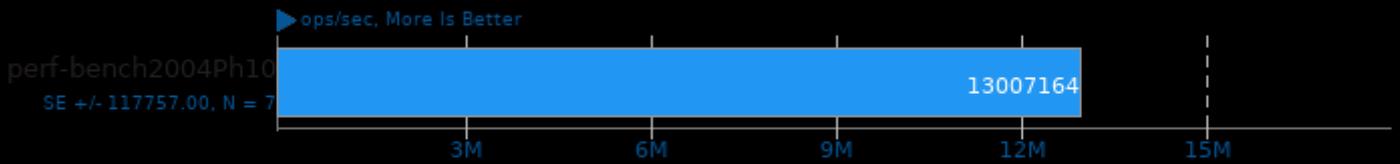
Benchmark: Futex Lock-Pi



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lcrypto -lz -lnuma

### perf-bench

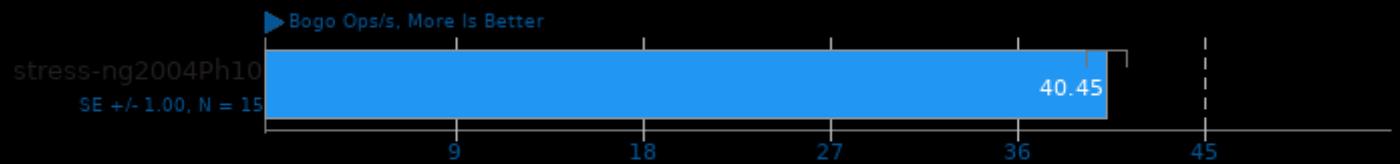
Benchmark: Syscall Basic



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lcrypto -lz -lnuma

### Stress-NG 0.11.07

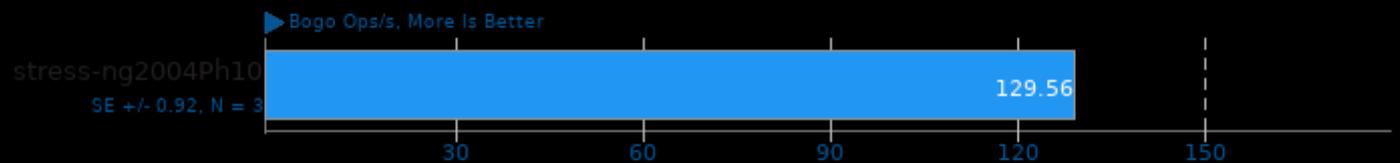
Test: MMAP



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

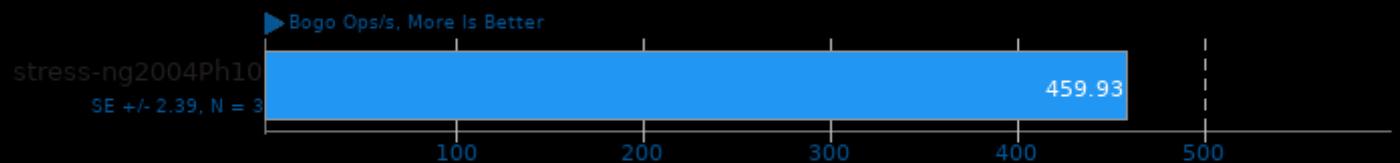
Test: NUMA



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

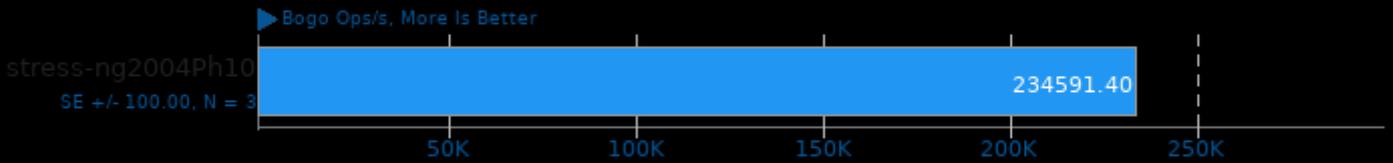
Test: MEMFD



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

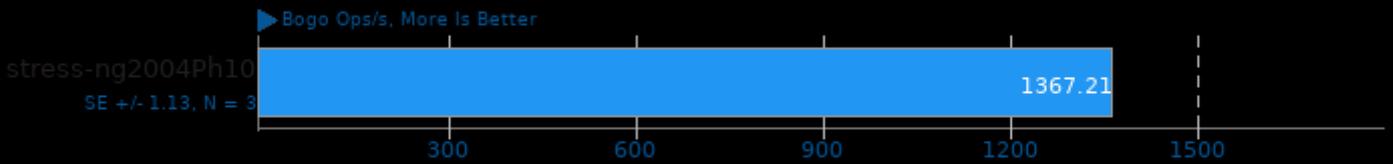
Test: Atomic



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

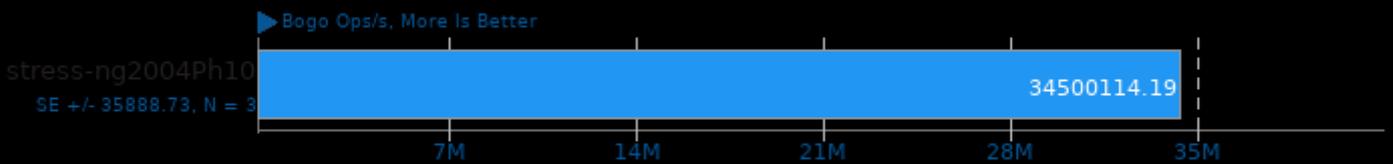
Test: Crypto



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

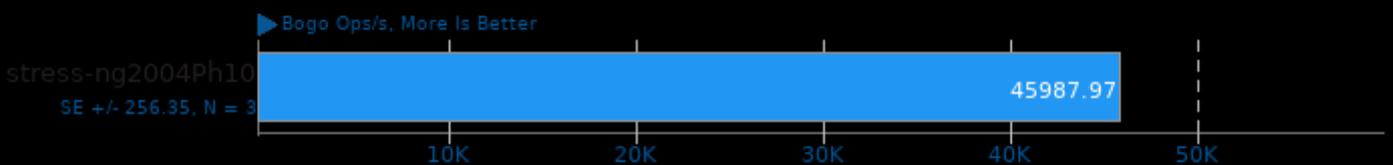
Test: Malloc



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

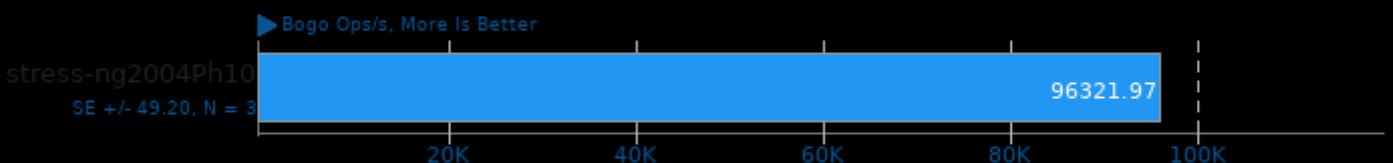
Test: Forking



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

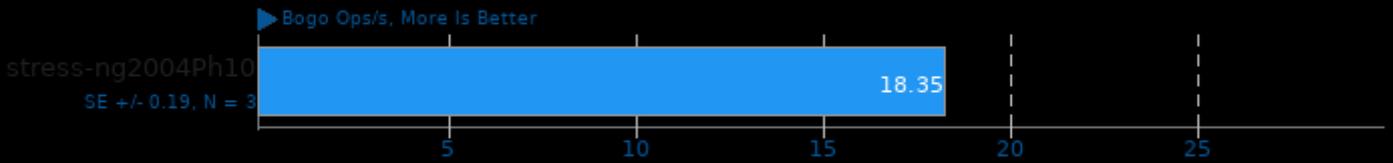
Test: SENDFILE



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

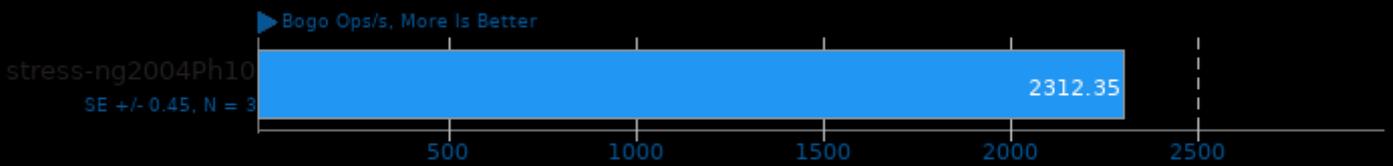
Test: CPU Cache



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

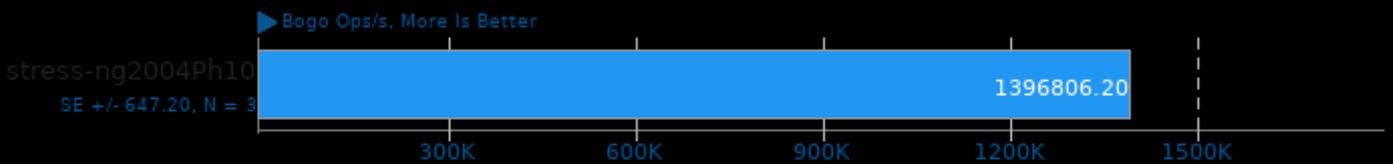
Test: CPU Stress



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

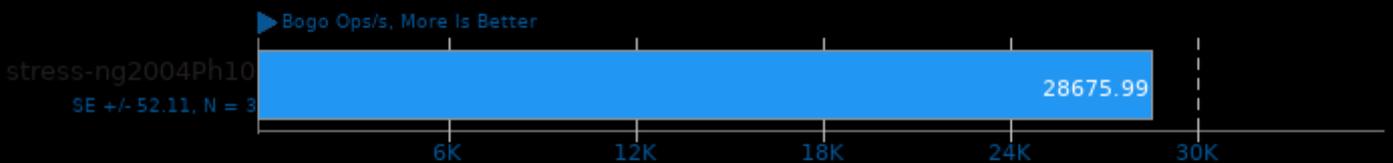
Test: Semaphores



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

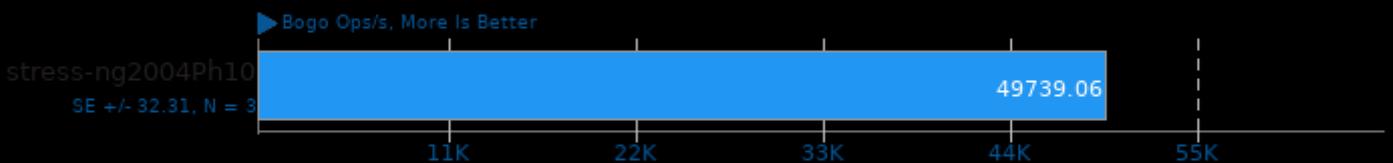
Test: Matrix Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Stress-NG 0.11.07

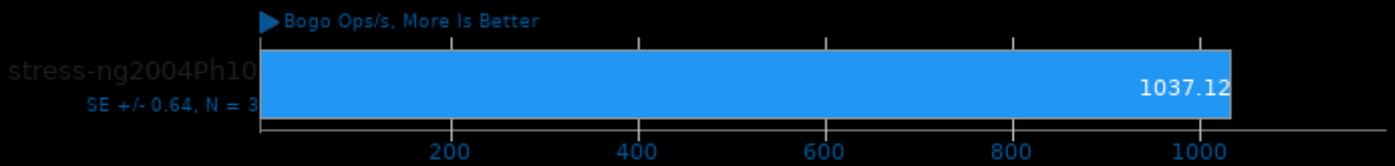
Test: Vector Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

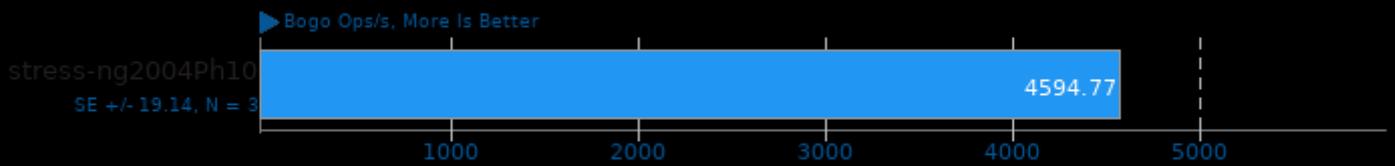
### Stress-NG 0.11.07

Test: Memory Copying



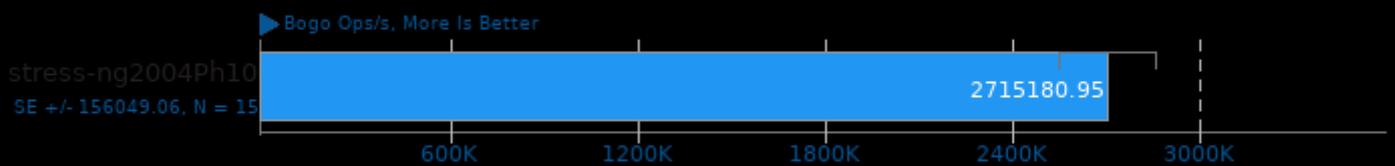
### Stress-NG 0.11.07

Test: Socket Activity



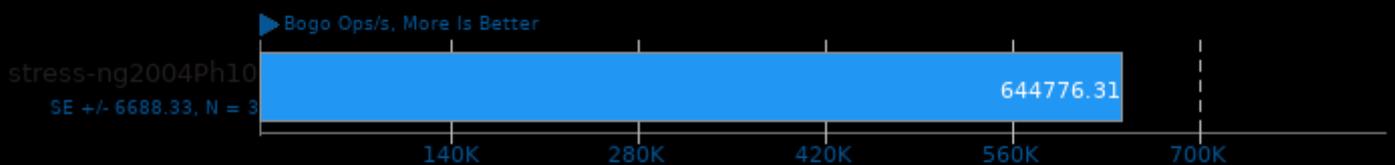
### Stress-NG 0.11.07

Test: Context Switching



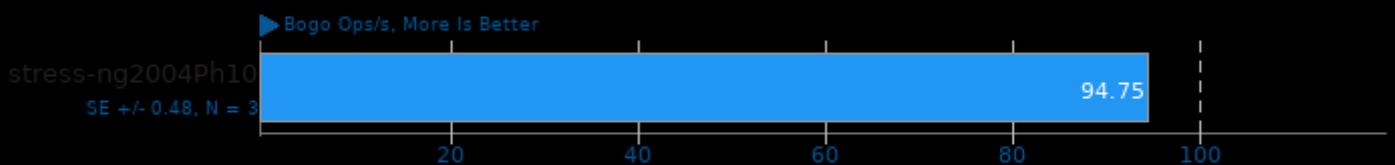
### Stress-NG 0.11.07

Test: Glibc C String Functions



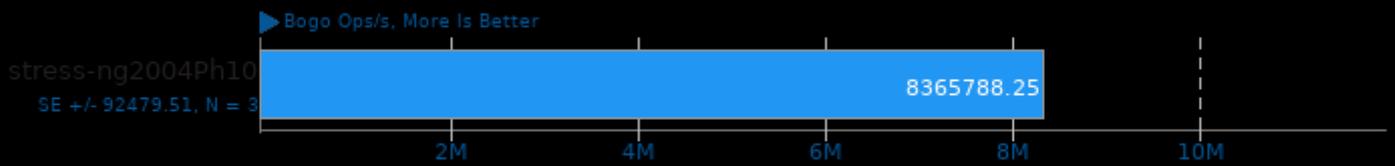
### Stress-NG 0.11.07

Test: Glibc Qsort Data Sorting



### Stress-NG 0.11.07

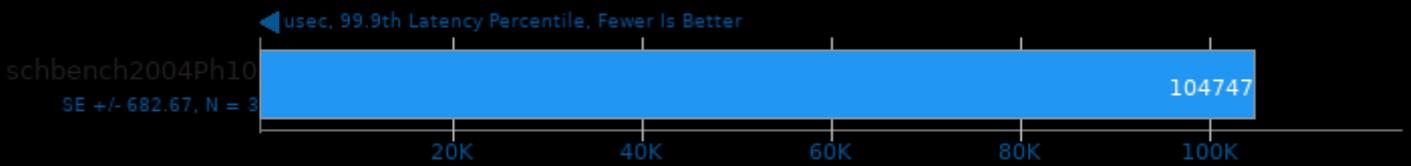
Test: System V Message Passing



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

### Schbench

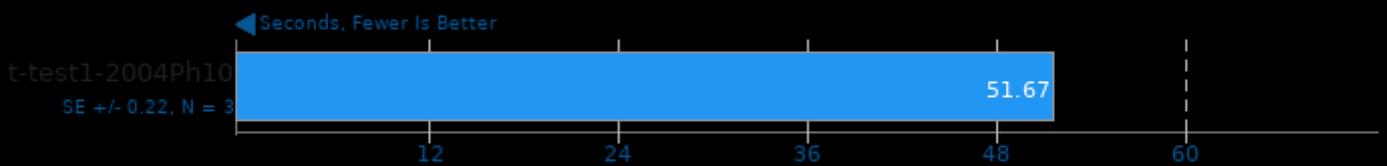
Message Threads: 8 - Workers Per Message Thread: 16



1. (CC) gcc options: -O2 -lpthread

### t-test1 2017-01-13

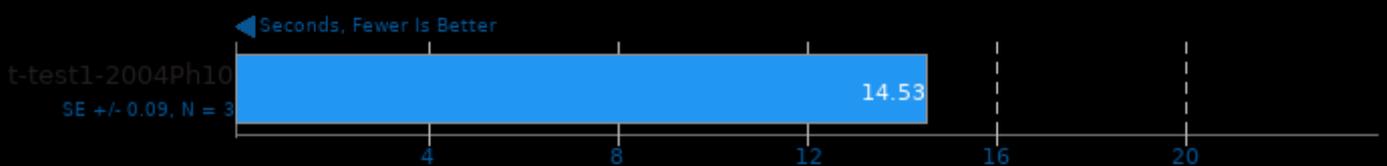
Threads: 1



1. (CC) gcc options: -pthread

### t-test1 2017-01-13

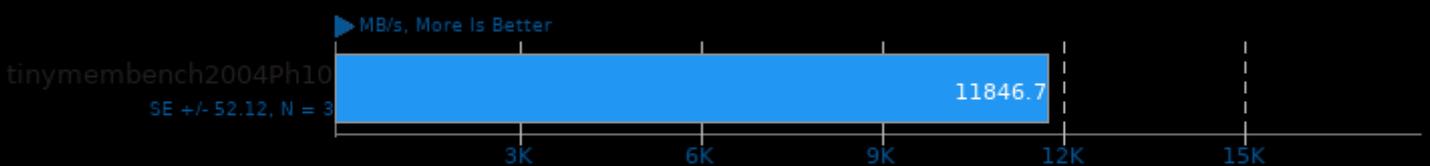
Threads: 2



1. (CC) gcc options: -pthread

### Tinymembench 2018-05-28

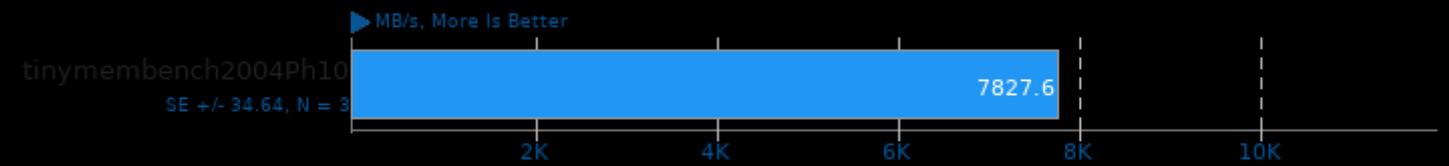
Standard Malloc



1. (CC) gcc options: -O2 -lm

## Tinymembench 2018-05-28

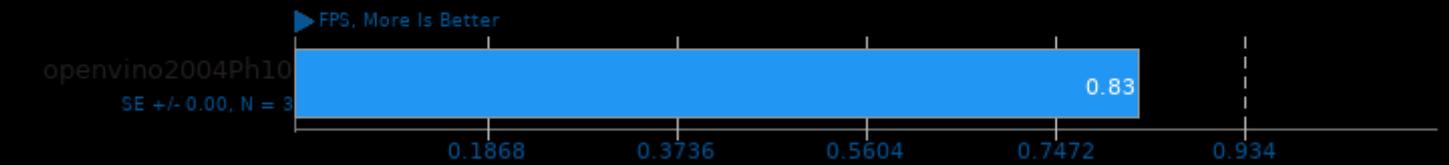
Standard Memset



1, (CC) gcc options: -O2 -lm

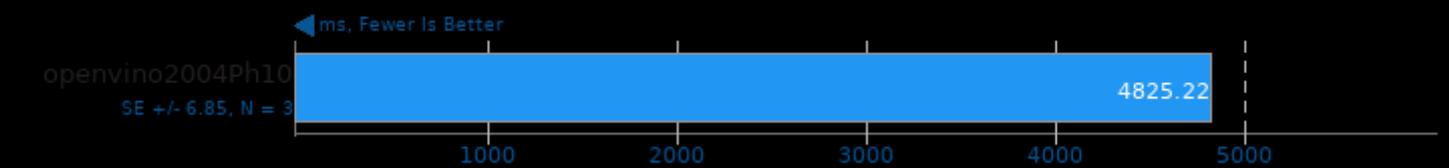
## OpenVINO 2021.1

Model: Face Detection 0106 FP16 - Device: CPU



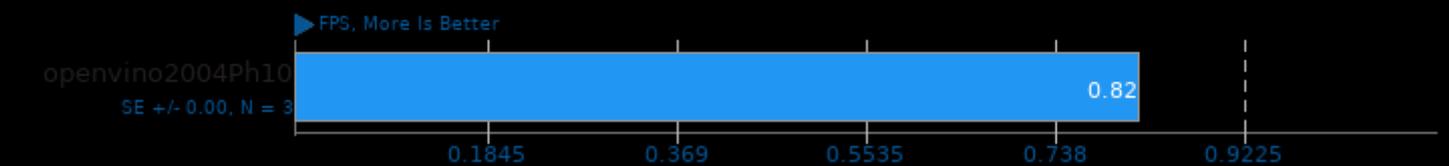
## OpenVINO 2021.1

Model: Face Detection 0106 FP16 - Device: CPU



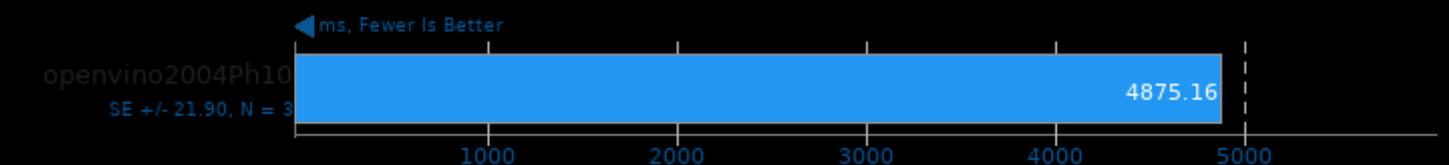
## OpenVINO 2021.1

Model: Face Detection 0106 FP32 - Device: CPU



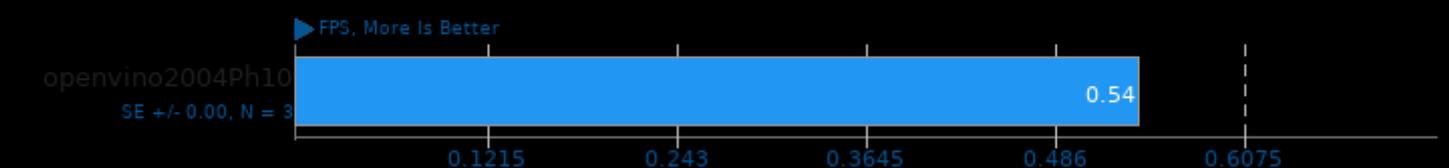
## OpenVINO 2021.1

Model: Face Detection 0106 FP32 - Device: CPU



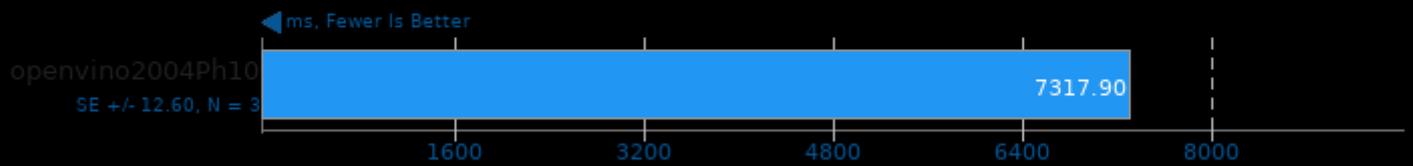
## OpenVINO 2021.1

Model: Person Detection 0106 FP16 - Device: CPU



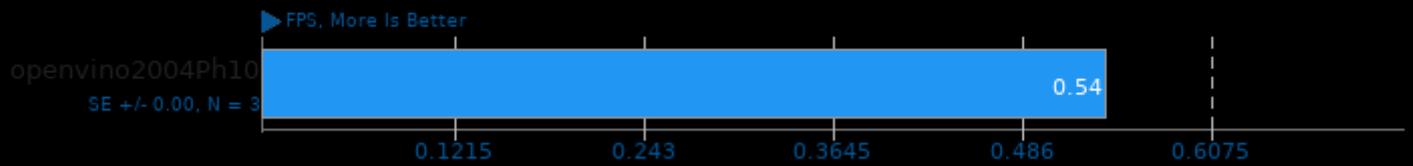
### OpenVINO 2021.1

Model: Person Detection 0106 FP16 - Device: CPU



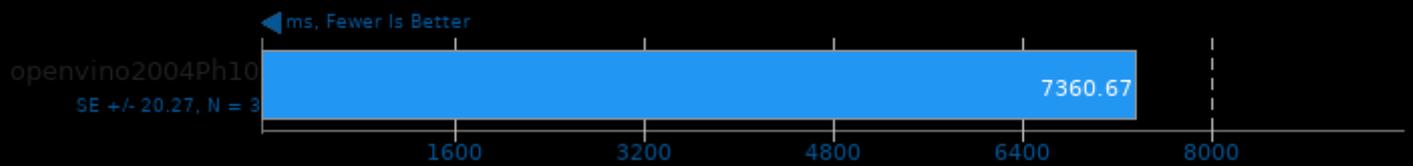
### OpenVINO 2021.1

Model: Person Detection 0106 FP32 - Device: CPU



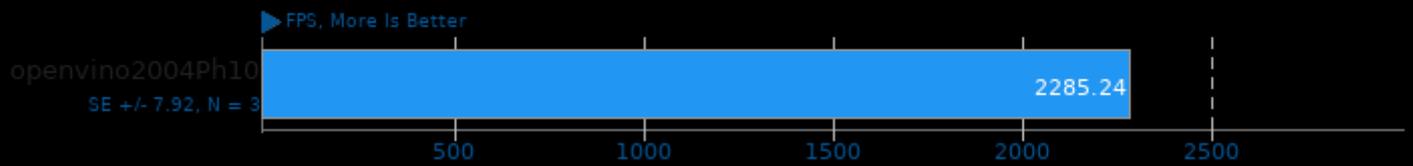
### OpenVINO 2021.1

Model: Person Detection 0106 FP32 - Device: CPU



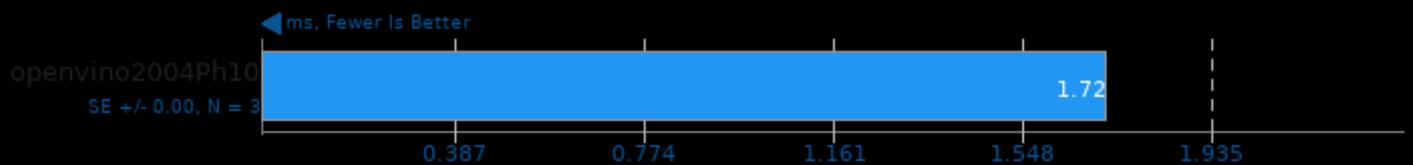
### OpenVINO 2021.1

Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU



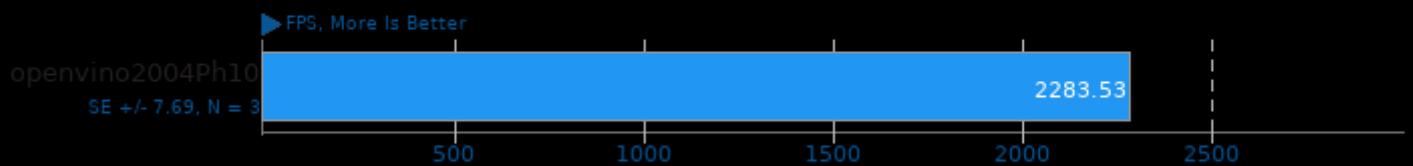
### OpenVINO 2021.1

Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU



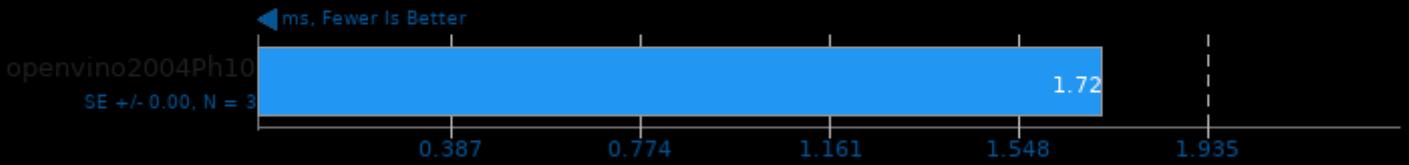
### OpenVINO 2021.1

Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU



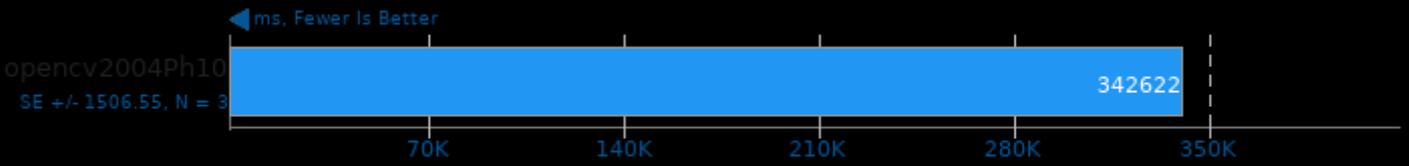
### OpenVINO 2021.1

Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU



### OpenCV 4.4

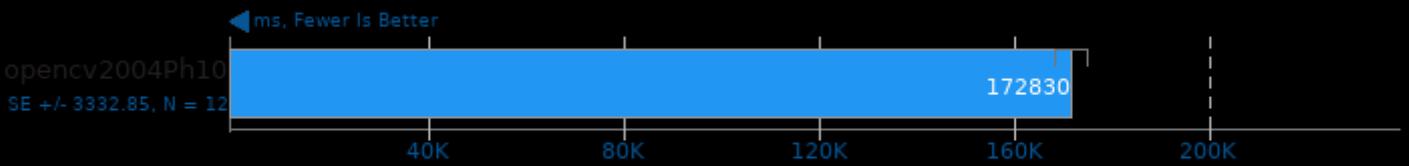
Test: Features 2D



1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl -l

### OpenCV 4.4

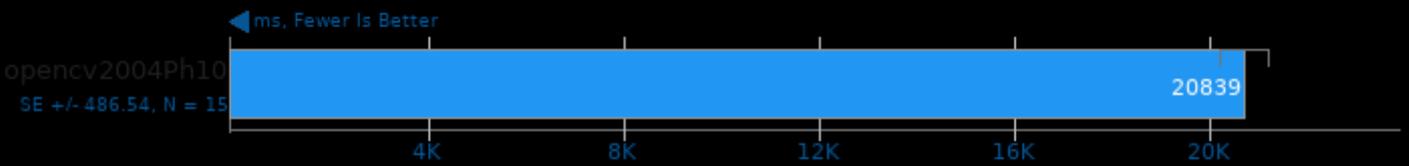
Test: Object Detection



1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl -l

### OpenCV 4.4

Test: DNN - Deep Neural Network



1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl -l

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