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Tioga-test

2 x Intel Xeon Gold 6330 $ testing with a Intel M50CYP2SBSTD (SE5C6200.86B.0019.D29.2011110211 BIOS) and ASPEED Family on CentOS Linux 7 via the Phoronix Test Suite.

Automated Executive Summary

Intel Xeon Gold 6238R had the most wins, coming in first place for 60% of the tests.

Based on the geometric mean of all complete results, the fastest (Intel Xeon Gold 6238R) was 1.041x the speed of the slowest (Intel-test).

Test Systems:

Intel Xeon Gold 6238R

Processor: 2 x Intel Xeon Gold 6238R @ 4.00GHz (56 Cores / 112 Threads), Motherboard: Wistron SV7220G3 (TPC_P23C BIOS), Memory: 2 x 32 GB DDR4-2933MT/s Micron 18ASF4G72PZ-2G9B1, Disk: 31GB Transcend 32GB + 1600GB Seagate ST1920KN0001, Graphics: astdrmfb

Tioga-test

OS: CentOS Linux 7, Kernel: 3.10.0-1160.31.1.el7.x86_64 (x86_64), Compiler: GCC 4.8.5 20150623, File-System: xfs, Screen Resolution: 1024x768

Compiler Notes: --build=x86_64-redhat-linux --disable-libgcj --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,objc,obj-c++,java,fortran,ada,go,lto --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=x86-64 --with-linker-hash-style=gnu --with-tune=generic
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: Load fences usercopy/swapgs barriers and __user pointer sanitization + Full retpoline IBPB + SSB disabled via prctl and seccomp

Intel-test

Processor: 2 x Intel Xeon Gold 6330 $ @ 3.10GHz (56 Cores / 112 Threads), Motherboard: Intel M50CYP2SBSTD (SE5C6200.86B.0019.D29.2011110211 BIOS), Chipset: Intel Device 0998, Memory: 2 x 32 GB DDR4-2933MT/s Micron 18ASF4G72PZ-2G9B1, Disk: 1600GB Seagate ST1920KN0001, Graphics: ASPEED Family, Network: Intel X710 for 10GbE SFP+

OS: CentOS Linux 7, Kernel: 3.10.0-1160.25.1.el7.x86_64 (x86_64), Compiler: GCC 4.8.5 20150623, File-System: xfs, Screen Resolution: 1024x768

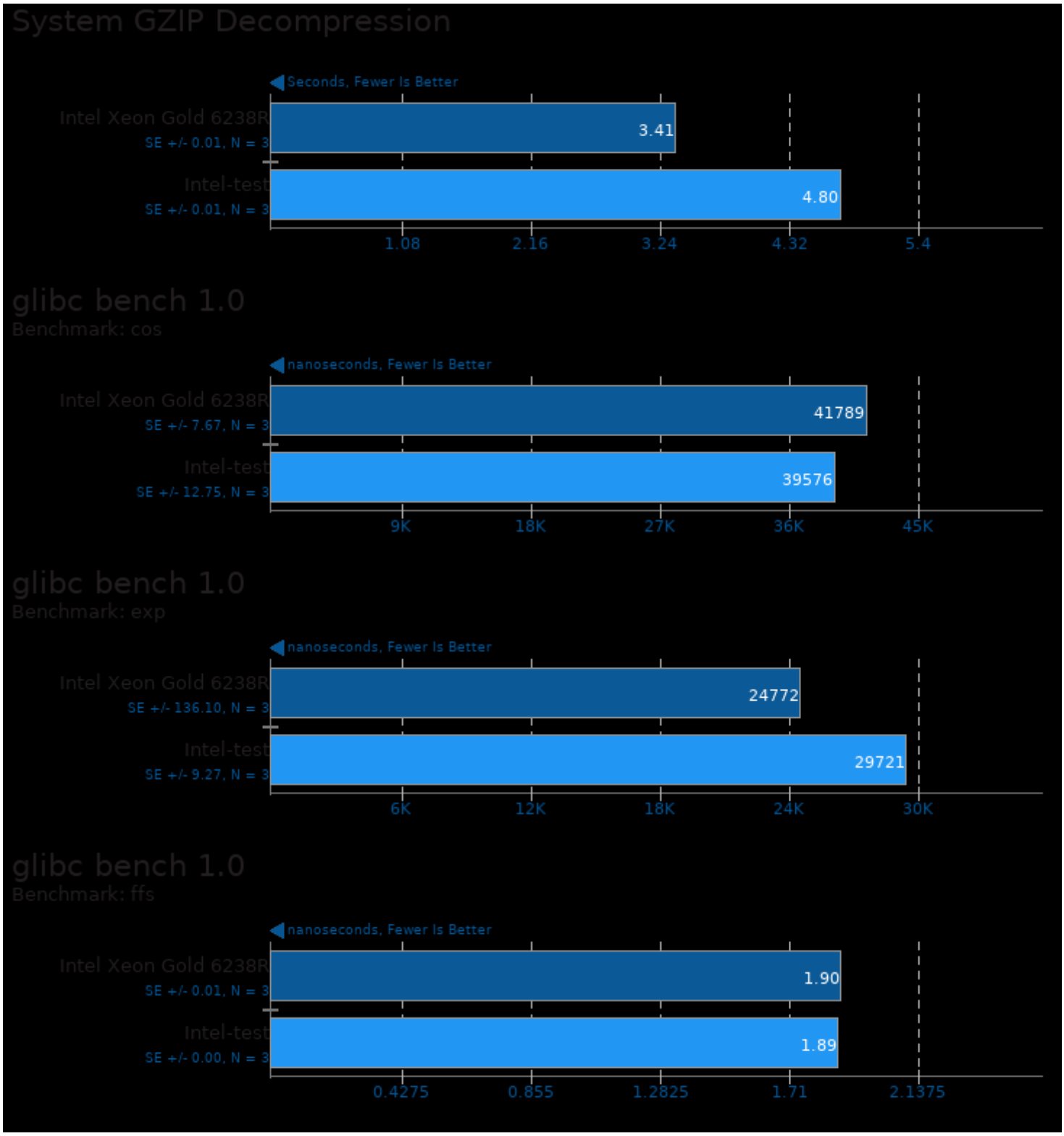
Compiler Notes: --build=x86_64-redhat-linux --disable-libgcj --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,objc,obj-c++,java,fortran,ada,go,lto --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=x86-64 --with-linker-hash-style=gnu --with-tune=generic
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: SELinux + Load fences usercopy/swapgs barriers and __user pointer sanitization + Enhanced IBRS IBPB + SSB disabled via prctl and seccomp

	Intel Xeon Gold 6238R	Intel-test
System GZIP Decompression (sec)	**3.41**	**4.80**
Normalized	100%	71.04%
Standard Deviation	0.5%	0.2%
glibc bench - cos (nanoseconds)	**41789**	**39576**
Normalized	94.7%	100%
Standard Deviation	0%	0.1%
glibc bench - exp (nanoseconds)	**24772**	**29721**
Normalized	100%	83.35%
Standard Deviation	1%	0.1%
glibc bench - ffs (nanoseconds)	**1.90**	**1.89**
Normalized	99.47%	100%
Standard Deviation	1%	0.4%
glibc bench - sin (nanoseconds)	**41972**	**39560**
Normalized	94.25%	100%
Standard Deviation	0.9%	0%
glibc bench - log2 (nanoseconds)	**9.41**	**9.62**
Normalized	100%	97.82%
Standard Deviation	1.1%	0.3%
glibc bench - modf (nanoseconds)	**2.67**	**2.23**
Normalized	83.52%	100%
Standard Deviation	0.8%	0.4%
glibc bench - sinh (nanoseconds)	**14.96**	**15.16**
Normalized	100%	98.68%
Standard Deviation	1.6%	0.6%
glibc bench - sqrt (nanoseconds)	**1.90**	**2.14**
Normalized	100%	88.79%

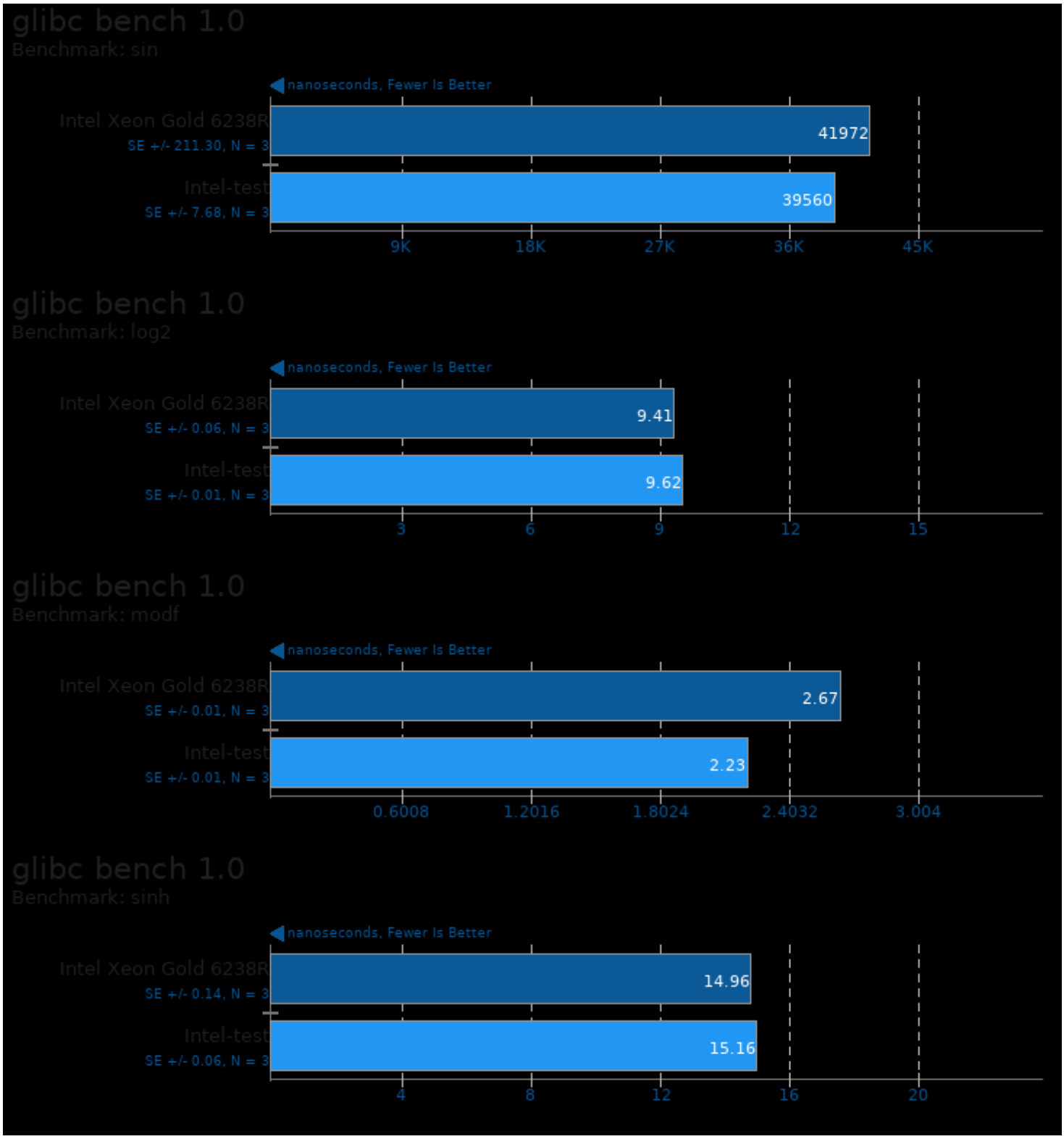
Tioga-test

Standard Deviation	1.3%	0.3%
glibc bench - tanh (nanoseconds)	**14.67**	**15.46**
Normalized	100%	94.89%
Standard Deviation	0.9%	0.3%
glibc bench - asinh (nanoseconds)	**21.06**	**22.51**
Normalized	100%	93.56%
Standard Deviation	0.7%	0.3%
glibc bench - atanh (nanoseconds)	**12.99**	**15.20**
Normalized	100%	85.46%
Standard Deviation	0.6%	0.3%
glibc bench - ffsll (nanoseconds)	**1.90**	**1.89**
Normalized	99.47%	100%
Standard Deviation	0.9%	0.4%
glibc bench - sincos (nanoseconds)	**41487**	**39224**
Normalized	94.55%	100%
Standard Deviation	0.6%	0.1%
glibc bench - pthread_once (nanoseconds)	1.91	1.91
Standard Deviation	0.9%	3.6%

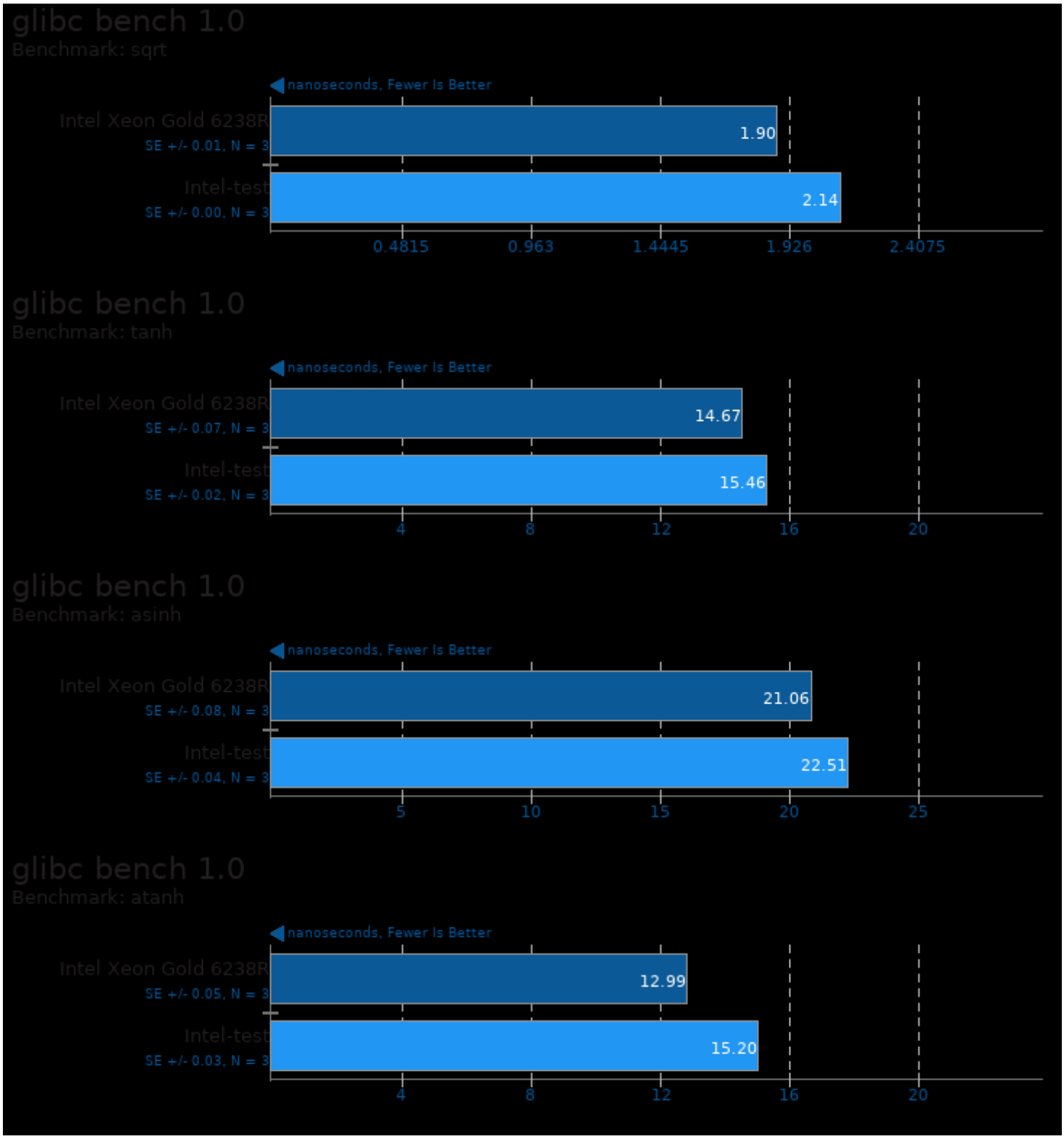
Tioga-test

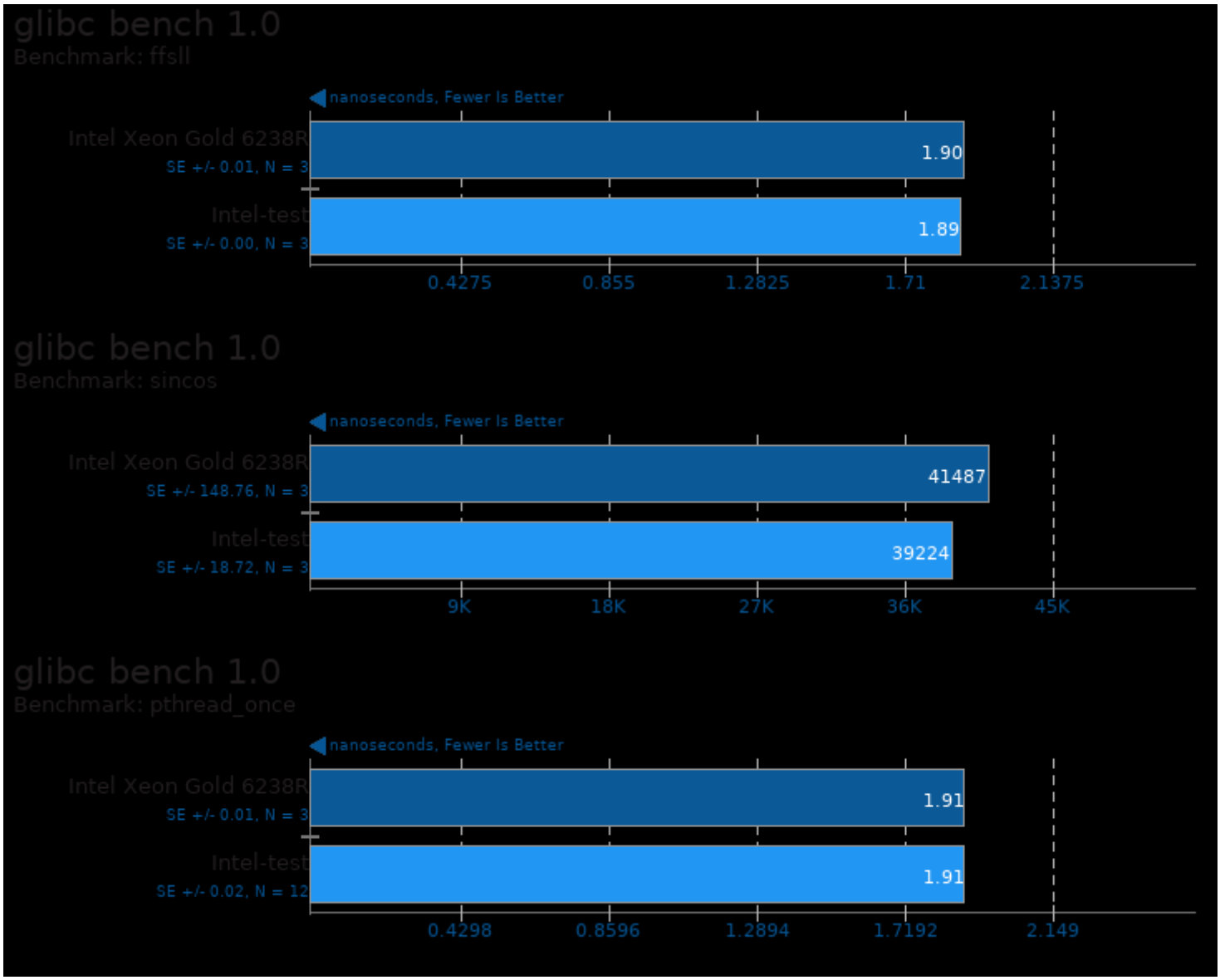

System GZIP Decompression
Seconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.01, N = 3
3.41
Intel-test
SE +/- 0.01, N = 3
4.80
1.08
2.16
3.24
4.32
5.4
glibc bench 1.0
Benchmark: cos
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 7.67, N = 3
41789
Intel-test
SE +/- 12.75, N = 3
39576
9K
18K
27K
36K
45K
glibc bench 1.0
Benchmark: exp
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 136.10, N = 3
24772
Intel-test
SE +/- 9.27, N = 3
29721
6K
12K
18K
24K
30K
glibc bench 1.0
Benchmark: ffs
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.01, N = 3
1.90
Intel-test
SE +/- 0.00, N = 3
1.89
0.4275
0.855
1.2825
1.71
2.1375

Tioga-test


glibc bench 1.0
Benchmark: sin
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 211.30, N = 3
41972
Intel-test
SE +/- 7.68, N = 3
39560
9K
18K
27K
36K
45K
glibc bench 1.0
Benchmark: log2
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.06, N = 3
9.41
Intel-test
SE +/- 0.01, N = 3
9.62
3
6
9
12
15
glibc bench 1.0
Benchmark: modf
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.01, N = 3
2.67
Intel-test
SE +/- 0.01, N = 3
2.23
0.6008
1.2016
1.8024
2.4032
3.004
glibc bench 1.0
Benchmark: sinh
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.14, N = 3
14.96
Intel-test
SE +/- 0.06, N = 3
15.16
4
8
12
16
20

Tioga-test


glibc bench 1.0
Benchmark: sqrt
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.01, N = 3
1.90
Intel-test
SE +/- 0.00, N = 3
2.14
0.4815
0.963
1.4445
1.926
2.4075
glibc bench 1.0
Benchmark: tanh
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.07, N = 3
14.67
Intel-test
SE +/- 0.02, N = 3
15.46
4
8
12
16
20
glibc bench 1.0
Benchmark: asinh
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.08, N = 3
21.06
Intel-test
SE +/- 0.04, N = 3
22.51
5
10
15
20
25
glibc bench 1.0
Benchmark: atanh
nanoseconds, Fewer Is Better
Intel Xeon Gold 6238R
SE +/- 0.05, N = 3
12.99
Intel-test
SE +/- 0.03, N = 3
15.20
4
8
12
16
20



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