



www.phoronix-test-suite.com

cpu-model-tests

Running pts/rodinia-1.2.2, pts/namd-1.0.1, pts/x264-2.5.0, pts/x265-1.1.0, pts/compress-7zip-1.7.0, pts/stockfish-1.1.1, pts/asmfish-1.1.1, pts/build-gcc-1.1.1, pts/build-linux-kernel-1.9.1, pts/povray-1.2.1, pts/radiance-1.0.0, pts/openssl-1.11.0, pts/ctx-clock-1.0.0, pts/sysbench-1.0.0, pts/blender-1.4.1 via the Phoronix Test Suite.

Automated Executive Summary

skylake had the most wins, coming in first place for 41% of the tests.

Based on the geometric mean of all complete results, the fastest (skylake) was 1.587x the speed of the slowest (kvm64-default-leve-hv). sandybridge was 0.951x the speed of skylake, kvm64-default was 0.903x the speed of sandybridge, sandybridge-lego-hv was 0.817x the speed of kvm64-default, kvm64-default-leve-hv was 0.898x the speed of sandybridge-lego-hv.

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

*x265 (H.265 1080p Video Encoding) at 4.119x
ctx_clock (Context Switch Time) at 2.263x
OpenSSL (RSA 4096-bit Performance) at 2.243x
Rodinia (Test: OpenMP LavaMD) at 1.753x
NAMD (ATPase Simulation - 327,506 Atoms) at 1.496x
Timed GCC Compilation (Time To Compile) at 1.469x*

Sysbench (Test: CPU) at 1.36x

asmFish (1024 Hash Memory, 26 Depth) at 1.197x

Stockfish (Total Time) at 1.193x

POV-Ray (Trace Time) at 1x.

Test Systems:

kvm64-default

Processor: 4 x QEMU Virtual 2.5+ @ 2.99GHz (4 Cores), Motherboard: QEMU Standard PC (i440FX + PIIX 1996), Chipset: Intel 440FX- 82441FX PMC, Memory: 8192MB, Disk: 107GB QEMU HDD, Graphics: Cirrus Logic GD 5446, Network: Red Hat Virtio device

OS: Ubuntu 18.04, Kernel: 4.15.0-88-generic (x86_64), File-System: ext4, Screen Resolution: 1024x768, System Layer: KVM QEMU

```
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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
```

sandybridge

Processor: 4 x Intel Xeon E312xx (Sandy Bridge) @ 2.99GHz (4 Cores), Motherboard: QEMU Standard PC (i440FX + PIIX 1996), Chipset: Intel 440FX- 82441FX PMC, Memory: 8192MB, Disk: 107GB QEMU HDD, Graphics: Cirrus Logic GD 5446, Network: Red Hat Virtio device

OS: Ubuntu 18.04, Kernel: 4.15.0-88-generic (x86_64), File-System: ext4, Screen Resolution: 1024x768, System Layer: KVM

```
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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
```

skylake

Processor: 4 x Intel Xeon (Skylake) @ 2.99GHz (4 Cores), Motherboard: QEMU Standard PC (i440FX + PIIX 1996), Chipset: Intel 440FX- 82441FX PMC, Memory: 8192MB, Disk: 107GB QEMU HDD, Graphics: Cirrus Logic GD 5446, Network: Red Hat Virtio device

OS: Ubuntu 18.04, Kernel: 4.15.0-88-generic (x86_64), File-System: ext4, Screen Resolution: 1024x768, System Layer: KVM

```
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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
```

sandybridge-lege-hv

Processor: 4 x Intel Xeon E312xx (Sandy Bridge) @ 2.60GHz (4 Cores), Motherboard: QEMU Standard PC (i440FX + PIIX 1996), Chipset: Intel 440FX- 82441FX PMC, Memory: 8192MB, Disk: 107GB QEMU HDD, Graphics: Cirrus Logic GD 5446, Network: Red Hat Virtio device

OS: Ubuntu 18.04, Kernel: 4.15.0-88-generic (x86_64), File-System: ext4, Screen Resolution: 1024x768, System Layer: KVM

```
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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes
--enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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-tune=generic --without-cuda-driver -v
```

kvm64-default-leve-hv

Processor: 4 x QEMU Virtual 2.5+ @ 2.60GHz (4 Cores), Motherboard: QEMU Standard PC (i440FX + PIIX 1996), Chipset: Intel 440FX- 82441FX PMC, Memory: 8192MB, Disk: 107GB QEMU HDD, Graphics: Cirrus Logic GD 5446, Network: Red Hat Virtio device

OS: Ubuntu 18.04, Kernel: 4.15.0-88-generic (x86_64), File-System: ext4, Screen Resolution: 1024x768, System Layer: KVM QEMU

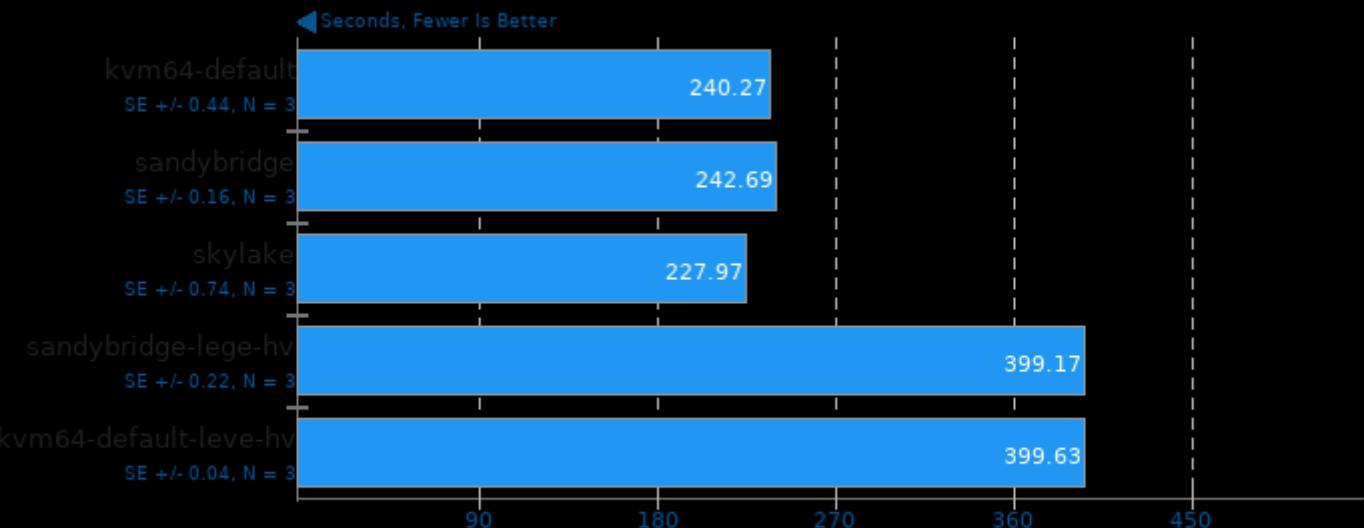
```
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie
--enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes
--enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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-tune=generic --without-cuda-driver -v
```

	kvm64-default	sandybridge	skylake	sandybridge-lege-hv	kvm64-default-leve-hv
Rodinia - OpenMP LavaMD (sec)	240.27	242.69	227.97	399.17	399.63
Normalized	94.88%	93.93%	100%	57.11%	57.05%
Standard Deviation	0.3%	0.1%	0.6%	0.1%	0%
Rodinia - OpenMP CFD Solver (sec)	54.39	59.28	63.44	87.35	87.71
Normalized	100%	91.75%	85.73%	62.27%	62.01%
Standard Deviation	2.7%	4.9%	11%	1.1%	0.3%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	5.98777	5.31428	5.49174	6.29456	7.94821
Normalized	88.75%	100%	96.77%	84.43%	66.86%
Standard Deviation	1.9%	1%	2.2%	0.2%	0.4%
x264 - H.2.V.E (FPS)	21.33	25.95	24.78	17.69	15.49
Normalized	82.2%	100%	95.49%	68.17%	59.69%
Standard Deviation	13.8%	7.7%	8.7%	4.2%	3.9%
x265 - H.2.1.V.E (FPS)	5.57	13.10	16.93	9.15	4.11
Normalized	32.9%	77.38%	100%	54.05%	24.28%
Standard Deviation	1.3%	1.9%	3.2%	1.3%	0.6%
7-Zip Compression - C.S.T	15133	15751	15103	12664	12726
Normalized	96.08%	100%	95.89%	80.4%	80.79%
Standard Deviation	8%	3.3%	3.5%	0.8%	1.6%

Stockfish - Total Time (Nodes/s)	7162437	7368258	7232907	6259990	6174983
Normalized	97.21%	100%	98.16%	84.96%	83.81%
Standard Deviation	3.3%	1.3%	3.4%	1%	0.9%
asmFish - 1.H.M.2.D (Nodes/s)	7820524	7792466	7475152	6538615	6534542
Normalized	100%	99.64%	95.58%	83.61%	83.56%
Standard Deviation	1.8%	1.2%	0.9%	2.6%	1.1%
Timed GCC Compilation - Time	1895	1941	1807	2655	2652
To Compile (sec)					
Normalized	95.38%	93.13%	100%	68.06%	68.14%
OpenSSL - R.4.b.P (Signs/sec)	643.57	649.30	1006	449.10	448.63
Normalized	63.96%	64.53%	100%	44.63%	44.59%
Standard Deviation	2.6%	0.6%	1.7%	0.3%	0.2%
Sysbench - CPU (Events/sec)	4885	4885	4783	3592	3594
Normalized	100%	99.99%	97.9%	73.53%	73.56%
Standard Deviation	0.1%	0.1%	2.7%	0.1%	0.3%
ctx_clock - C.S.T (Clocks)		891	593	1342	
Normalized		66.55%	100%	44.19%	
Standard Deviation		0.1%	0.2%	1.1%	
POV-Ray - Trace Time (sec)			183.27		
Standard Deviation			0.5%		
Perl Benchmarks - Pod2html				0.23553849	
Standard Deviation				2%	
Perl Benchmarks - Interpreter				0.00153722	
Standard Deviation				1.8%	
glibc bench - cos (nanoseconds)				53539	
Standard Deviation				0.4%	
glibc bench - exp (nanoseconds)				32227	
Standard Deviation				0.3%	
glibc bench - ffs (nanoseconds)				3.44	
Standard Deviation				0.1%	
glibc bench - sin (nanoseconds)				53486	
Standard Deviation				0.2%	
glibc bench - log2				17.16	
Standard Deviation				0.3%	
glibc bench - modf				4.06	
Standard Deviation				0.3%	
glibc bench - sinh				24.72	
Standard Deviation				1.2%	
glibc bench - sqrt (nanoseconds)				6.45	
Standard Deviation				0.3%	
glibc bench - tanh				24.64	
Standard Deviation				0.1%	
glibc bench - asinh				32.16	
Standard Deviation				0.1%	
glibc bench - atanh				24.40	
Standard Deviation				0.3%	
glibc bench - ffsl (nanoseconds)				3.75	
Standard Deviation				0.3%	
glibc bench - sincos				52758	
Standard Deviation				0.2%	
glibc bench - pthread_once				3.44	
(nanoseconds)				0.2%	
Standard Deviation					

Rodinia 2.4

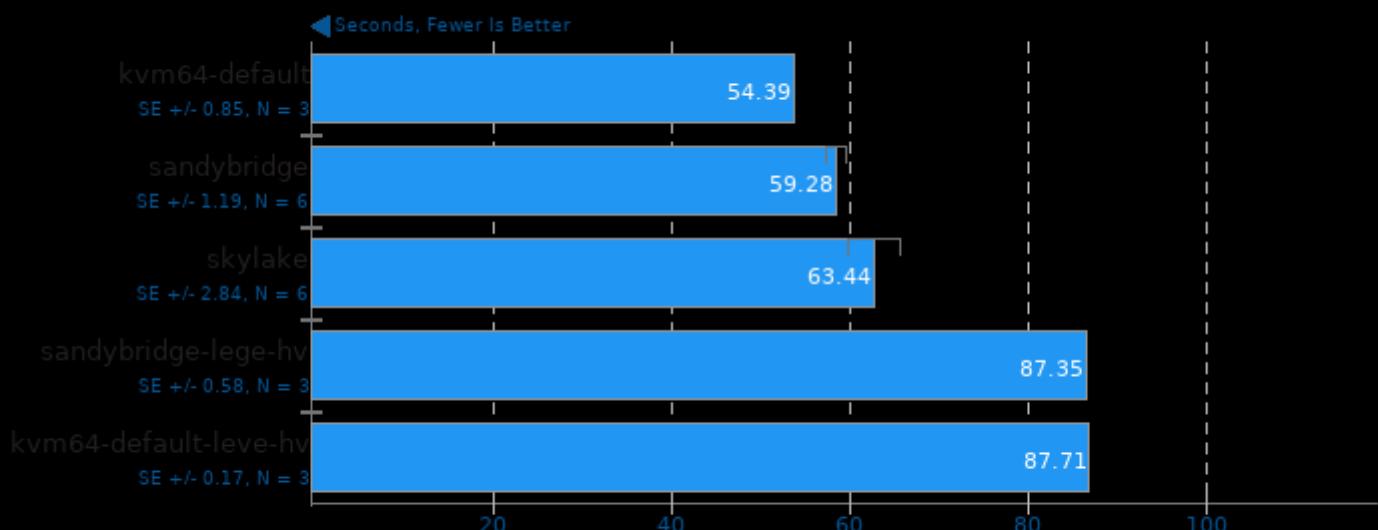
Test: OpenMP LavaMD



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

Rodinia 2.4

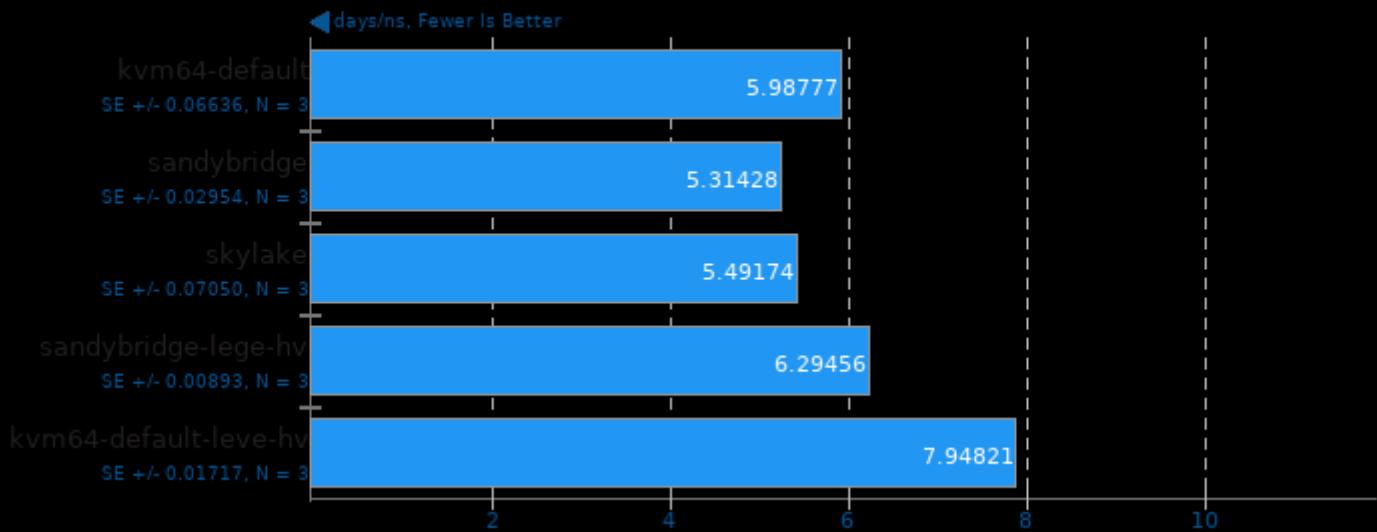
Test: OpenMP CFD Solver



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

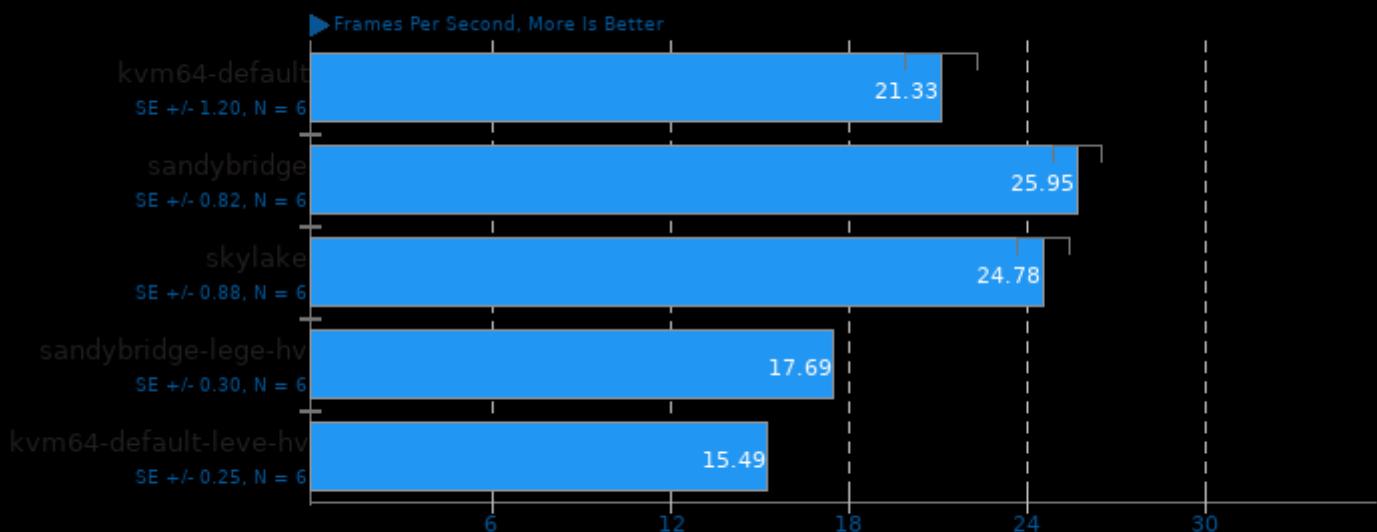
NAMD 2.13b1

ATPase Simulation - 327,506 Atoms



X264 2018-09-25

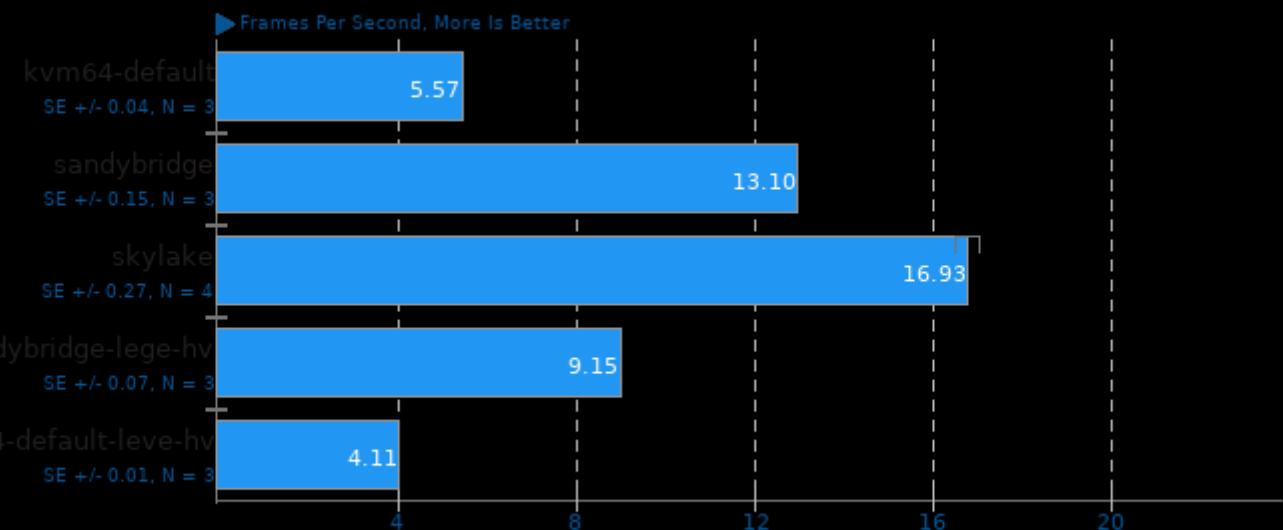
H.264 Video Encoding



1. (CC) gcc options: -fno-omit-frame-pointer -fno-tree-vectorize

x265 3.0

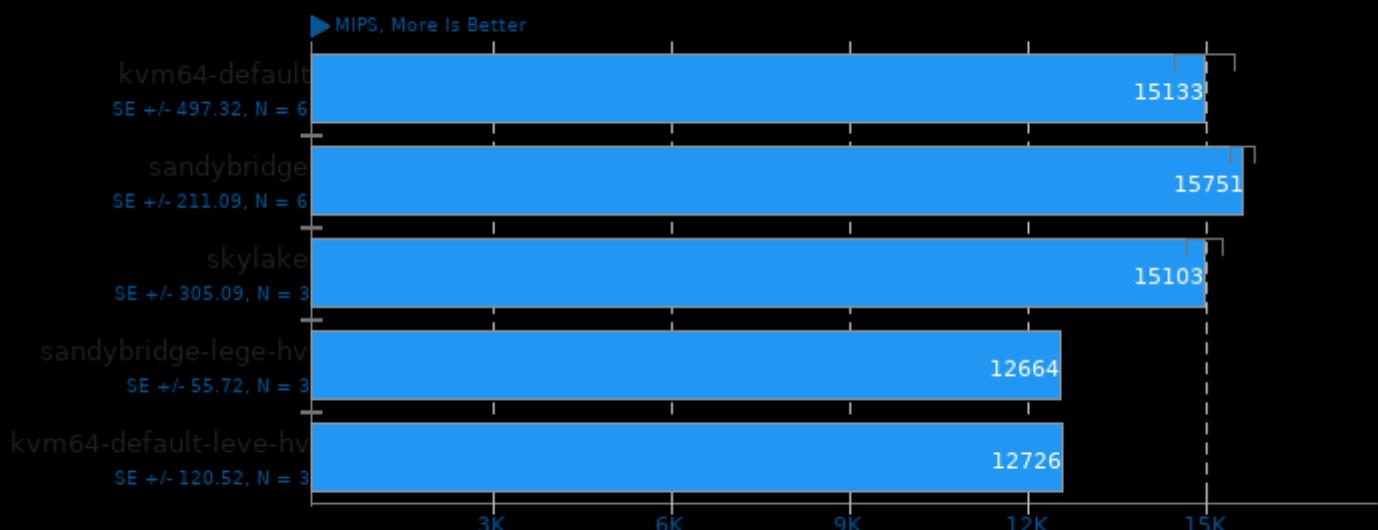
H.265 1080p Video Encoding



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

7-Zip Compression 16.02

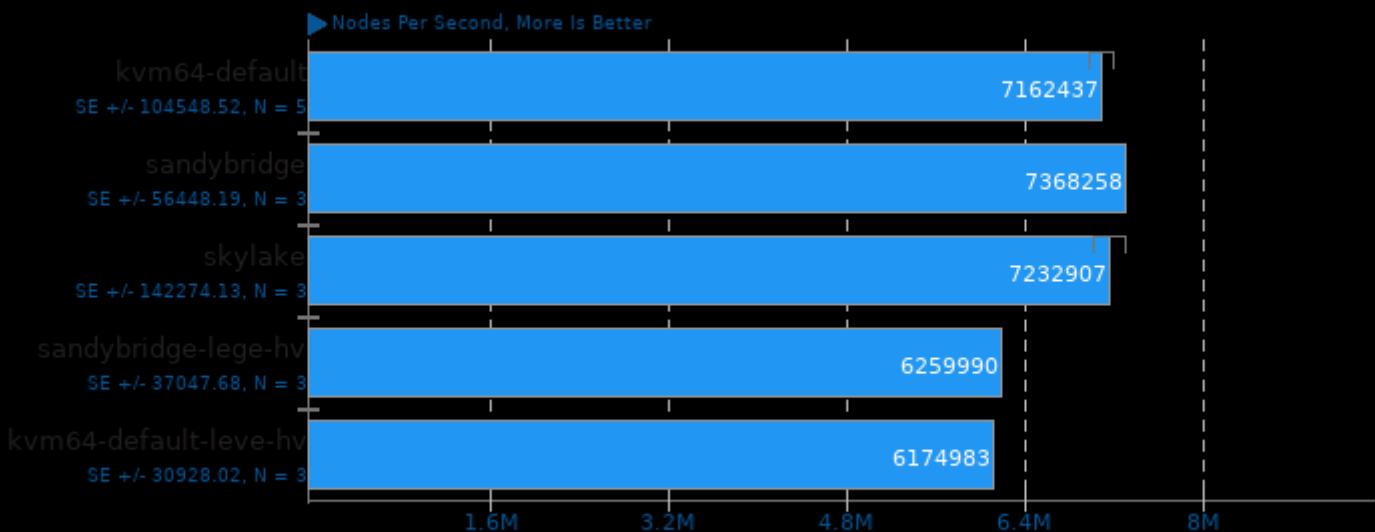
Compress Speed Test



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

Stockfish 9

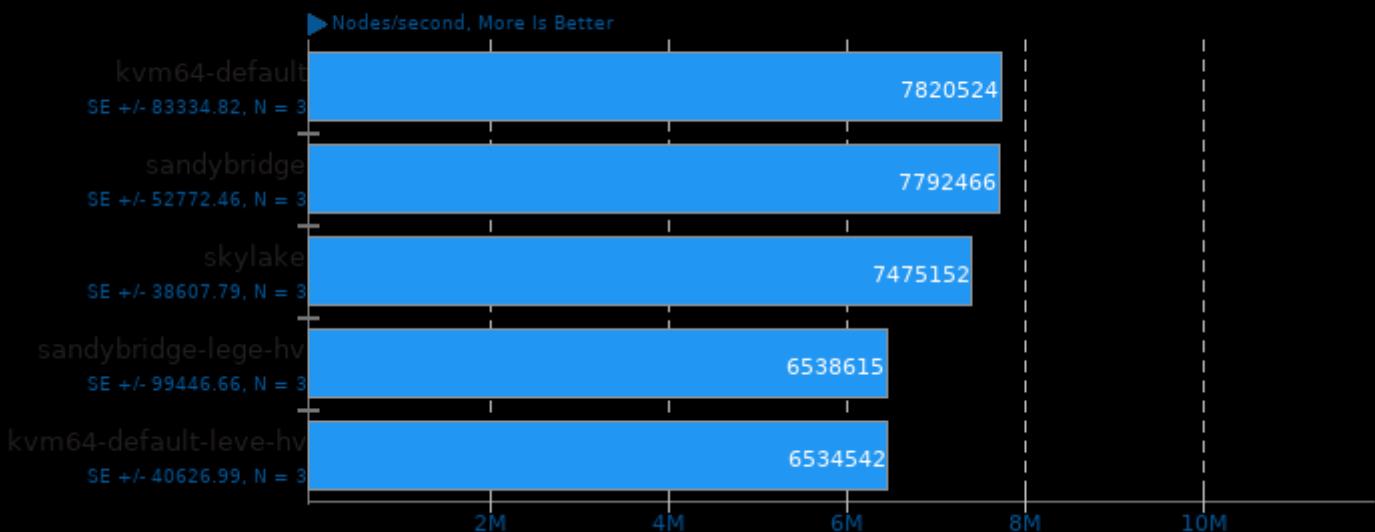
Total Time



1. (CXX) g++ options: -m64 -fthread -fno-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -fno-

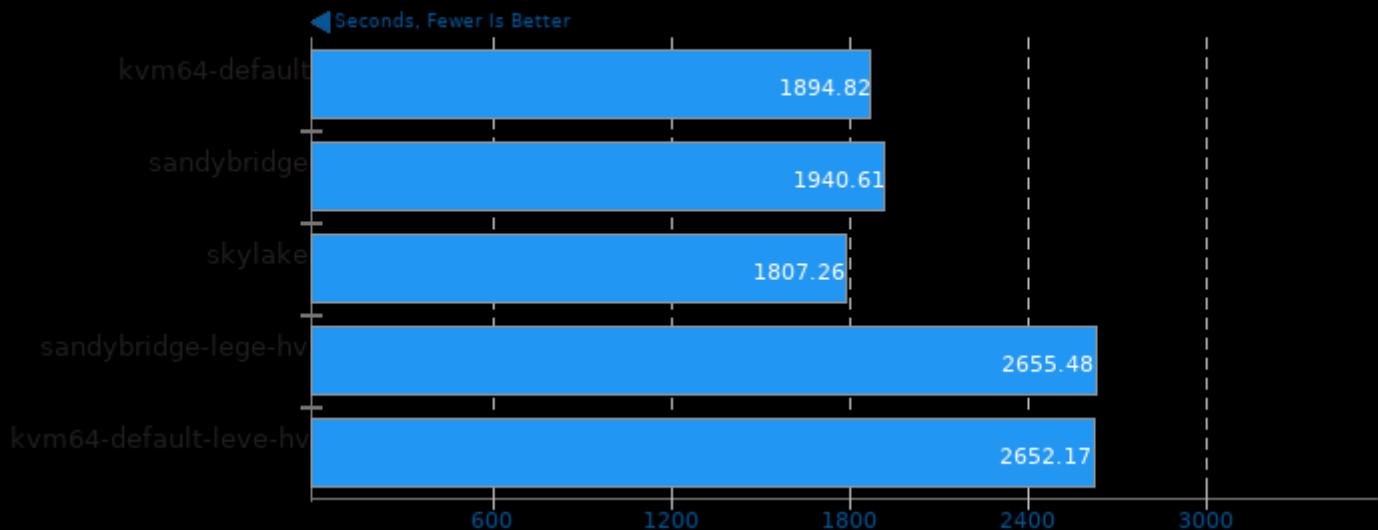
asmFish 2018-07-23

1024 Hash Memory, 26 Depth



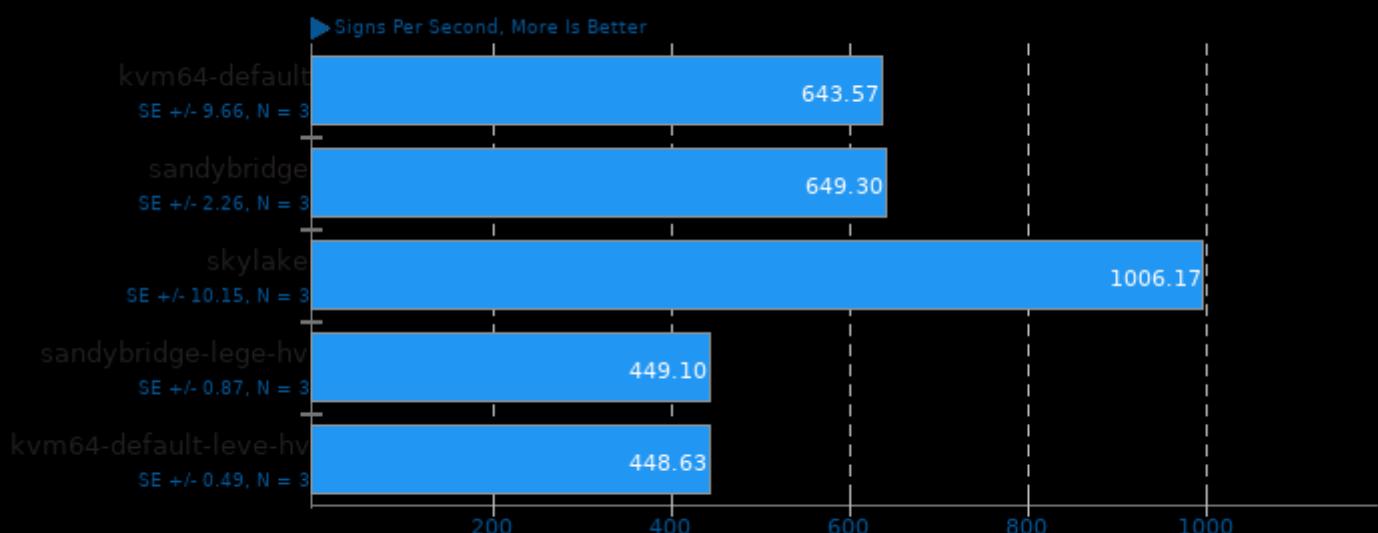
Timed GCC Compilation 8.2

Time To Compile



OpenSSL 1.1.1

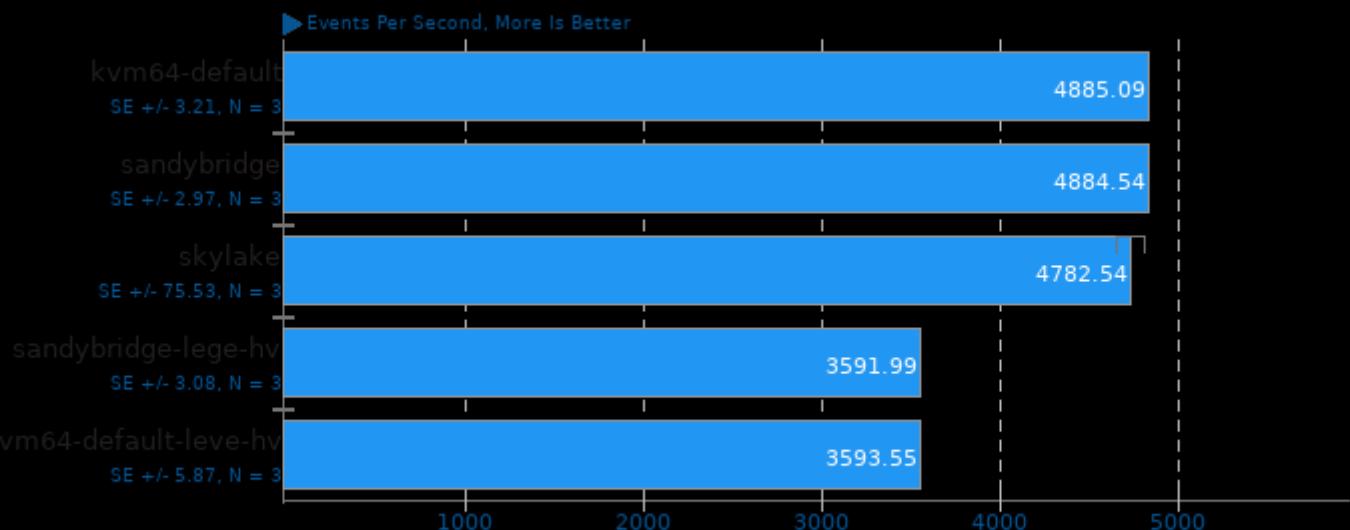
RSA 4096-bit Performance



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

Sysbench 2018-07-28

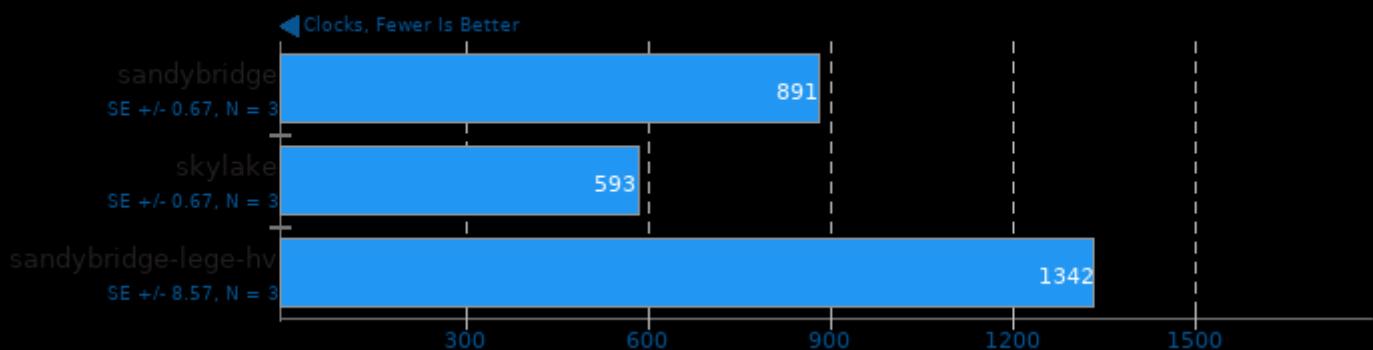
Test: CPU



1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=core2 -rdynamic -ldl -lao -lm

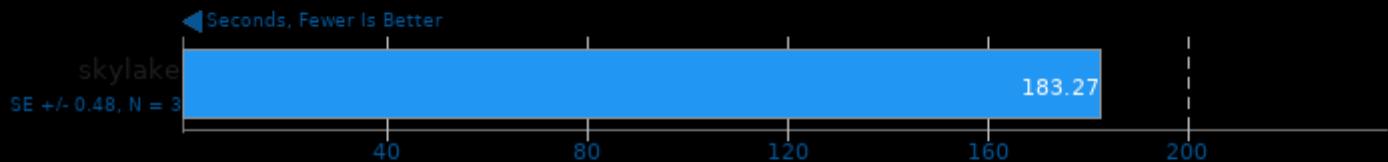
ctx_clock

Context Switch Time



POV-Ray 3.7.0.7

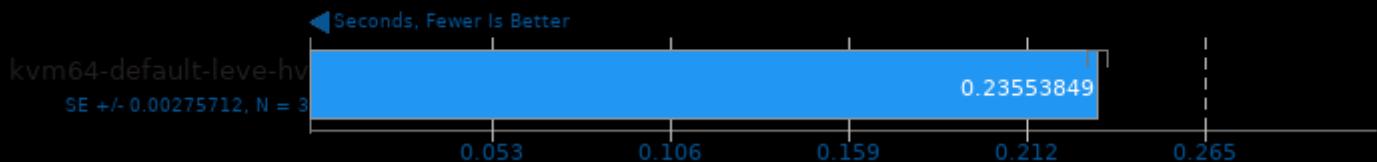
Trace Time



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -lXpm -lSM -ICE -lX11 -ltiff -ljpeg -lpng -lz -lrt -lm -lboost_thread -lboost_system

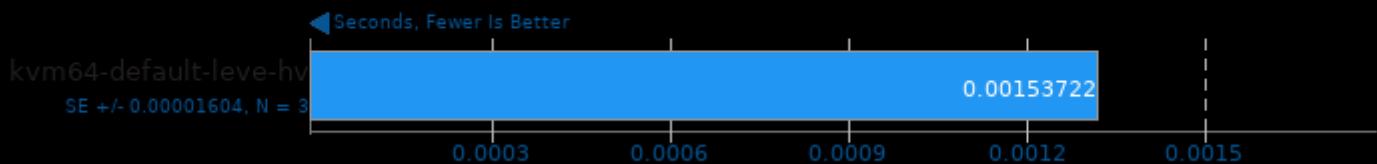
Perl Benchmarks

Test: Pod2html



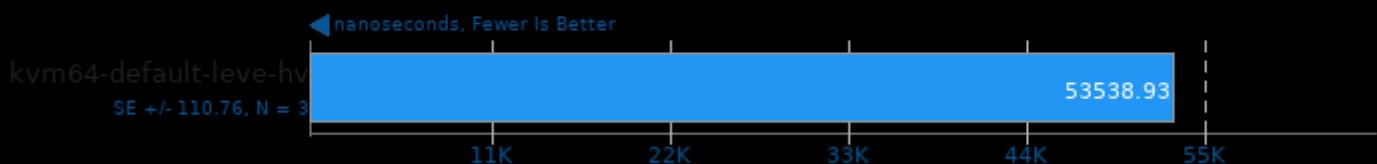
Perl Benchmarks

Test: Interpreter



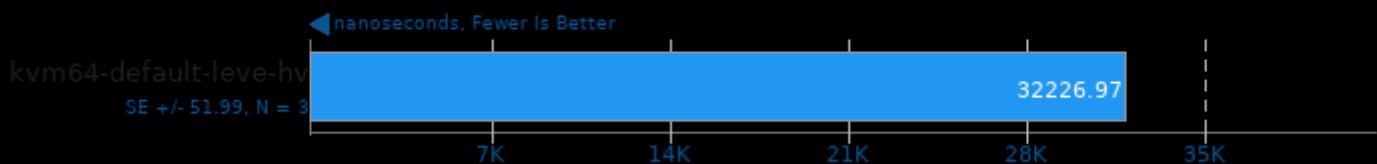
glibc bench 1.0

Benchmark: cos



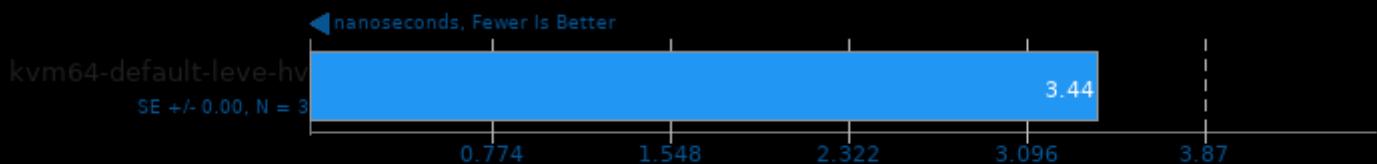
glibc bench 1.0

Benchmark: exp



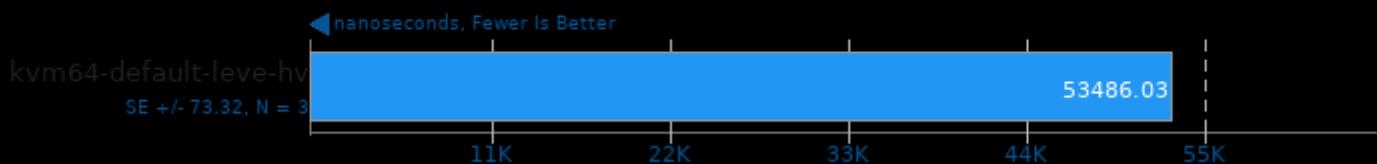
glibc bench 1.0

Benchmark: ffs



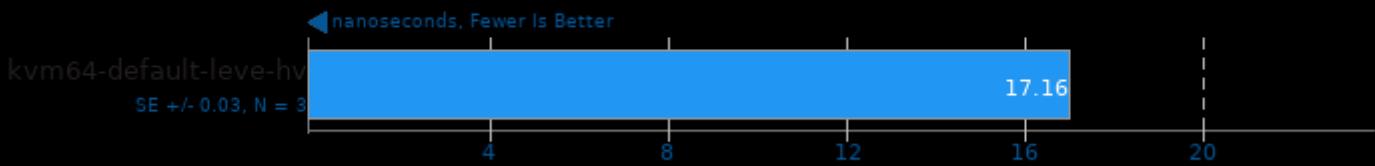
glibc bench 1.0

Benchmark: sin

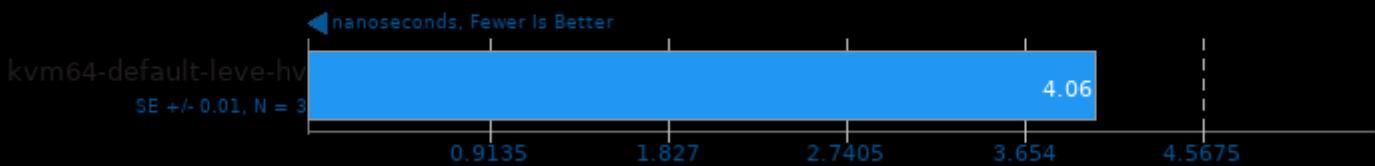


glibc bench 1.0

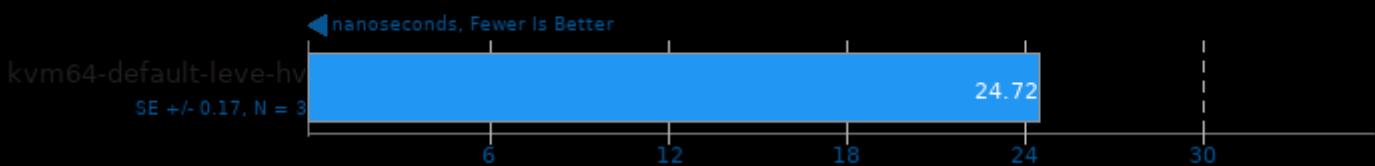
Benchmark: log2

**glibc bench 1.0**

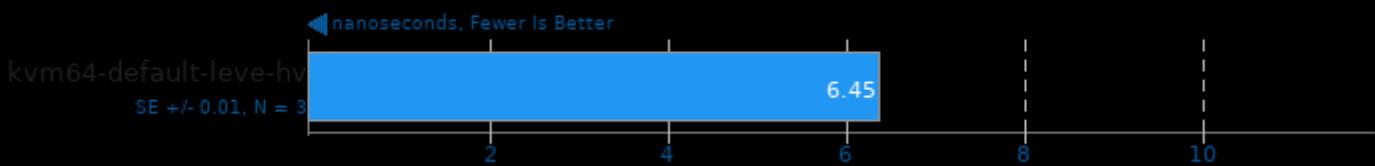
Benchmark: modf

**glibc bench 1.0**

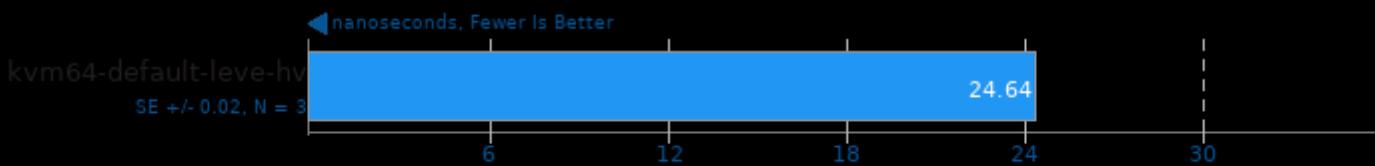
Benchmark: sinh

**glibc bench 1.0**

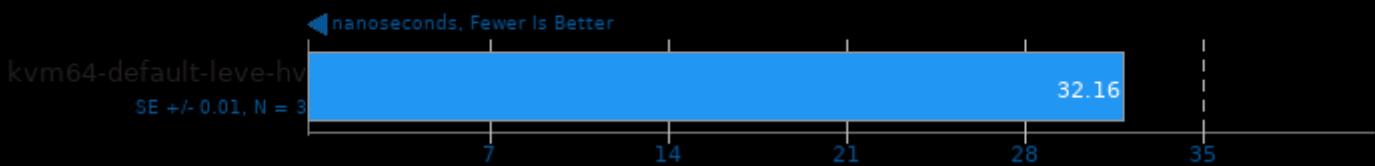
Benchmark: sqrt

**glibc bench 1.0**

Benchmark: tanh

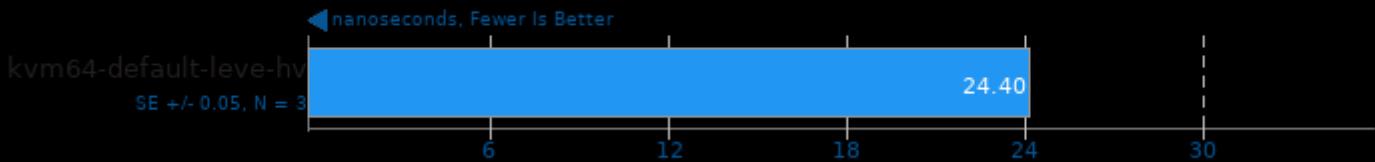
**glibc bench 1.0**

Benchmark: asinh

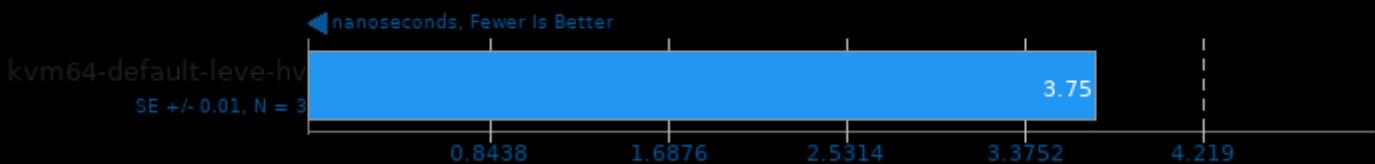


glibc bench 1.0

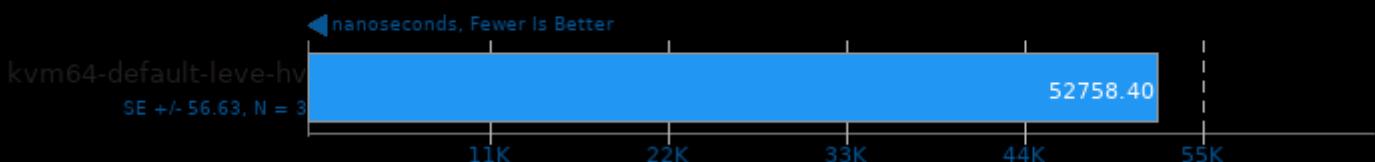
Benchmark: atanh

**glibc bench 1.0**

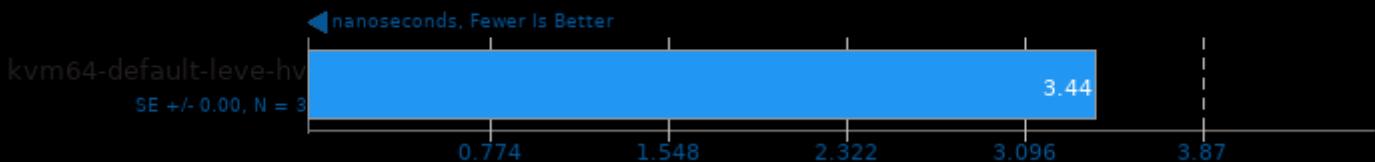
Benchmark: ffsl

**glibc bench 1.0**

Benchmark: sincos

**glibc bench 1.0**

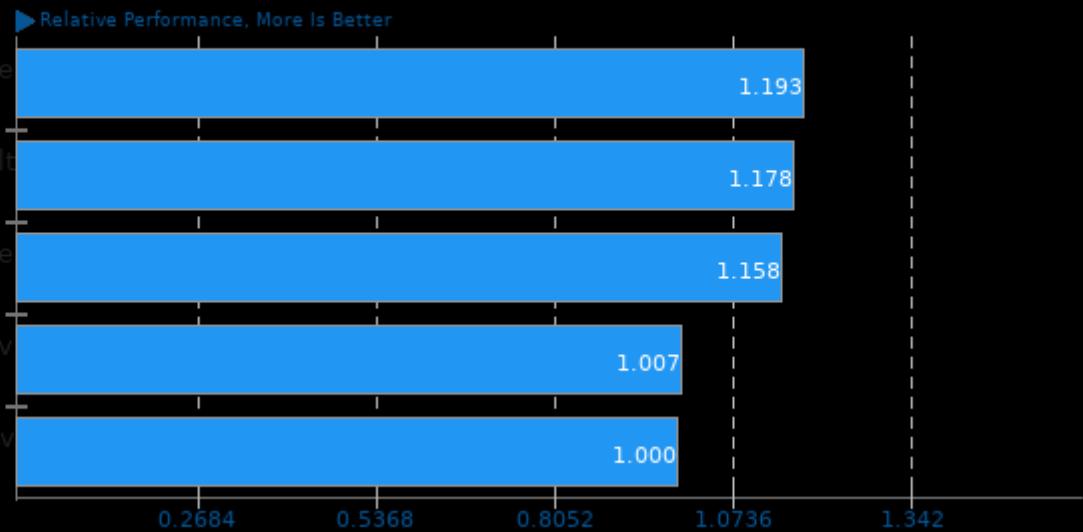
Benchmark: pthread_once



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

Geometric Mean Of Chess Test Suite

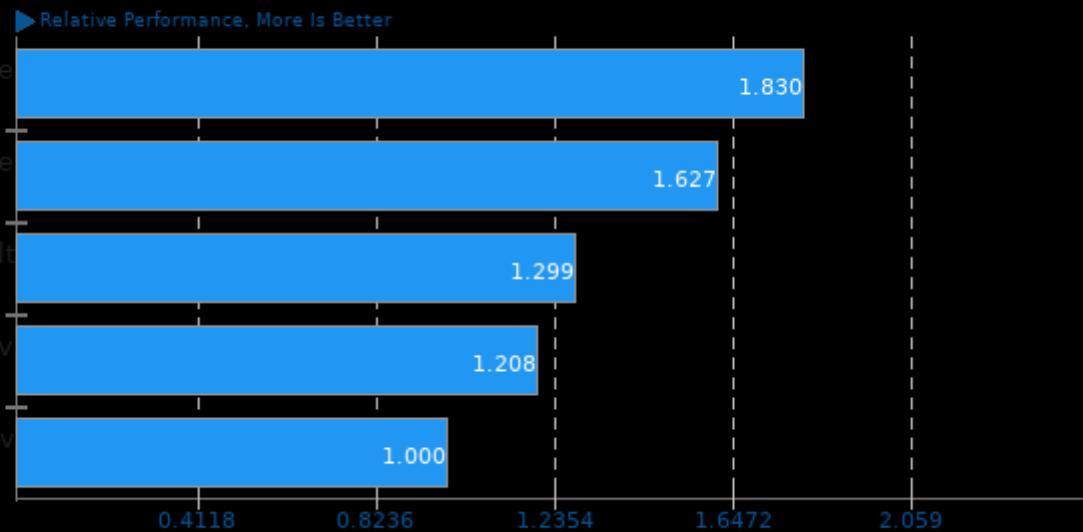
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/stockfish and pts/asmfish

Geometric Mean Of C/C++ Compiler Tests

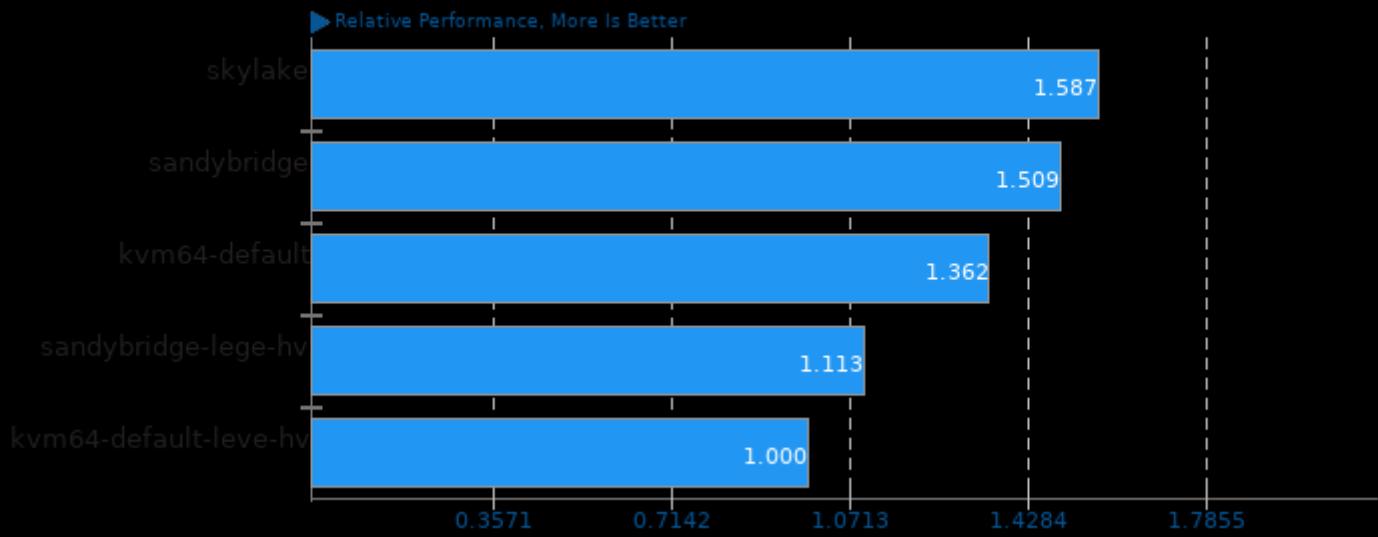
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/stockfish, pts/compress-7zip, pts/x264, pts/x265 and pts/openssl

Geometric Mean Of CPU Massive Tests

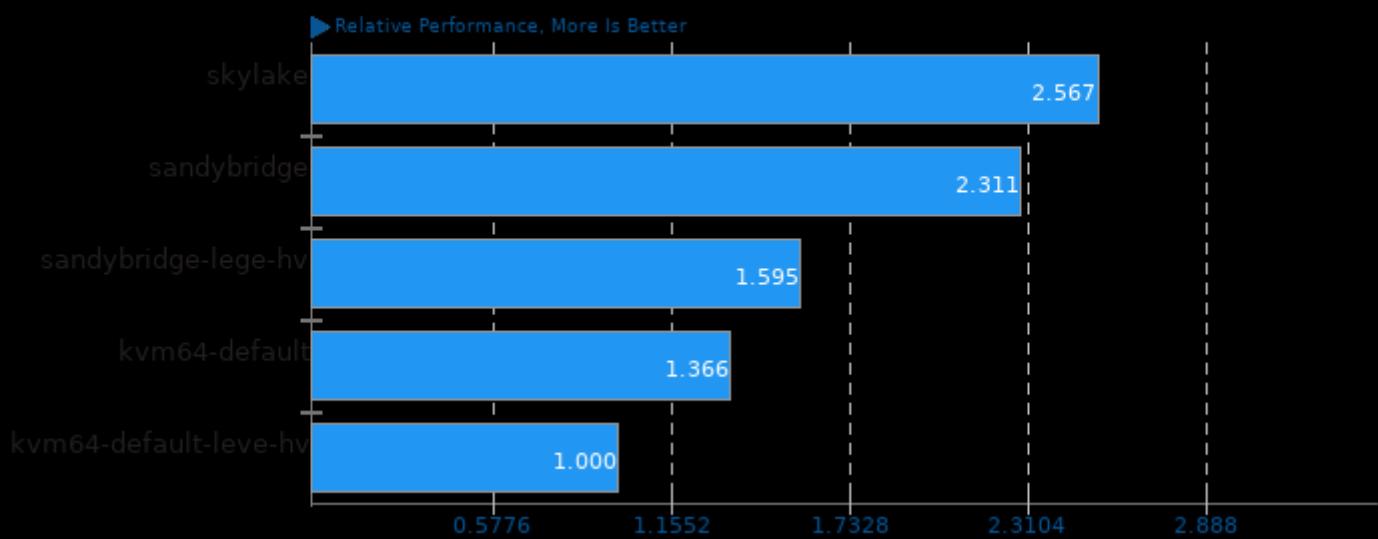
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/asmdisk, pts/build-gcc, pts/compress-7zip, pts/ctx-clock, pts/x264, pts/x265, pts/glibc-bench, pts/openssl, pts/namd, pts/povray, pts/rodinia, pts/stockfish and pts/sysbench

Geometric Mean Of Creator Workloads Tests

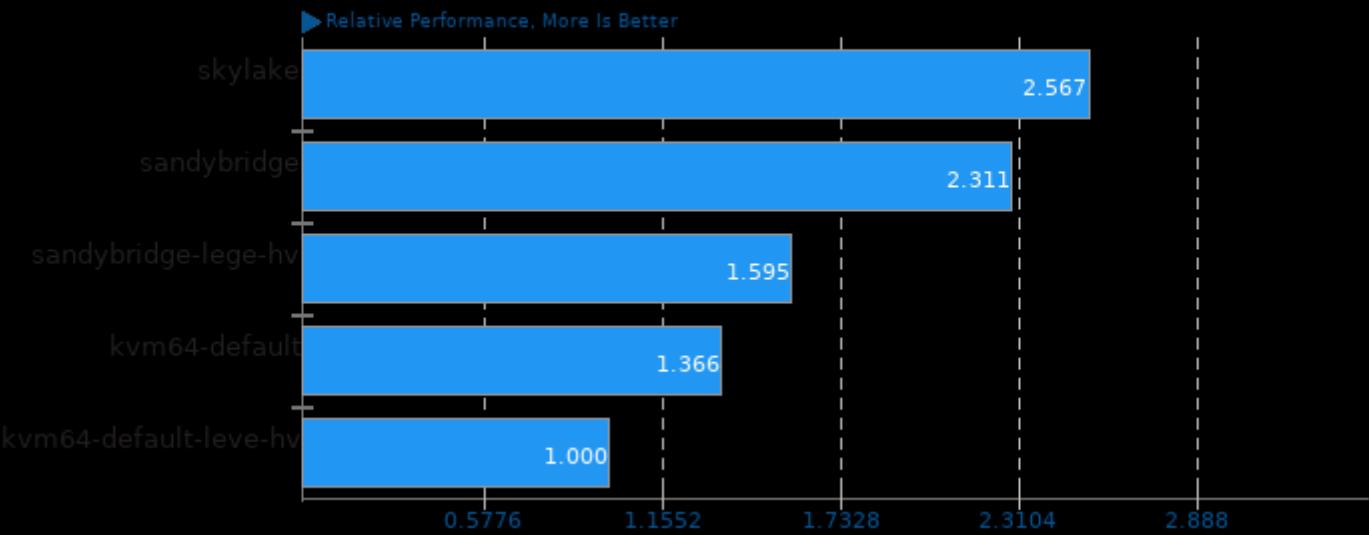
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/povray, pts/x264 and pts/x265

Geometric Mean Of Encoding Tests

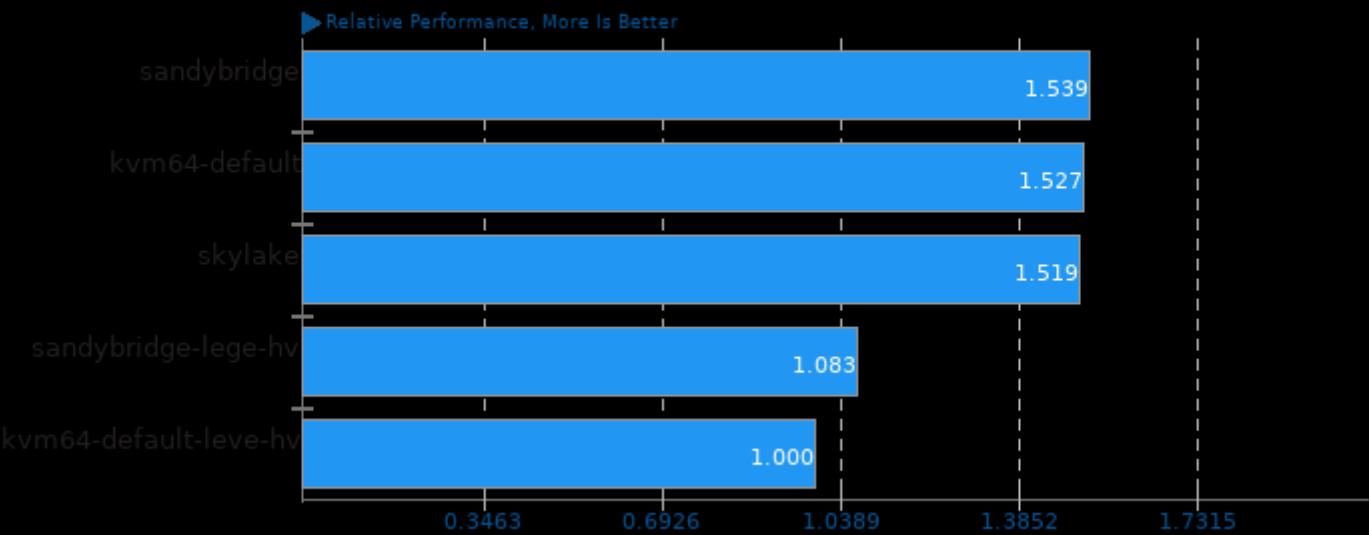
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/x264 and pts/x265

Geometric Mean Of HPC - High Performance Computing Tests

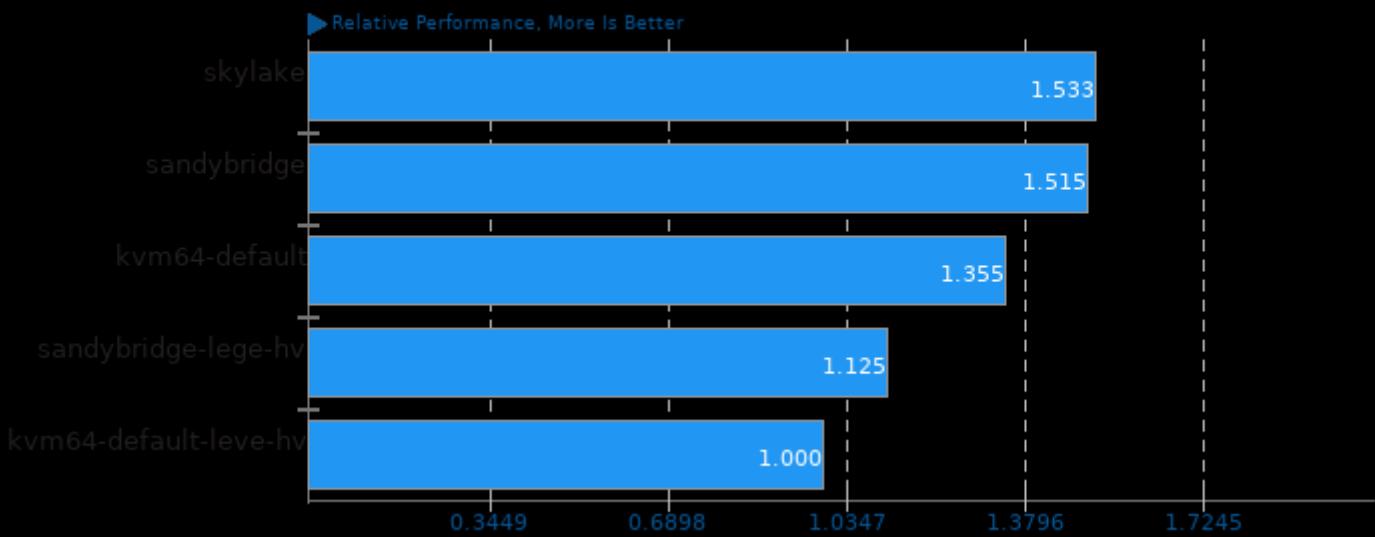
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/rodinia and pts/namd

Geometric Mean Of Multi-Core Tests

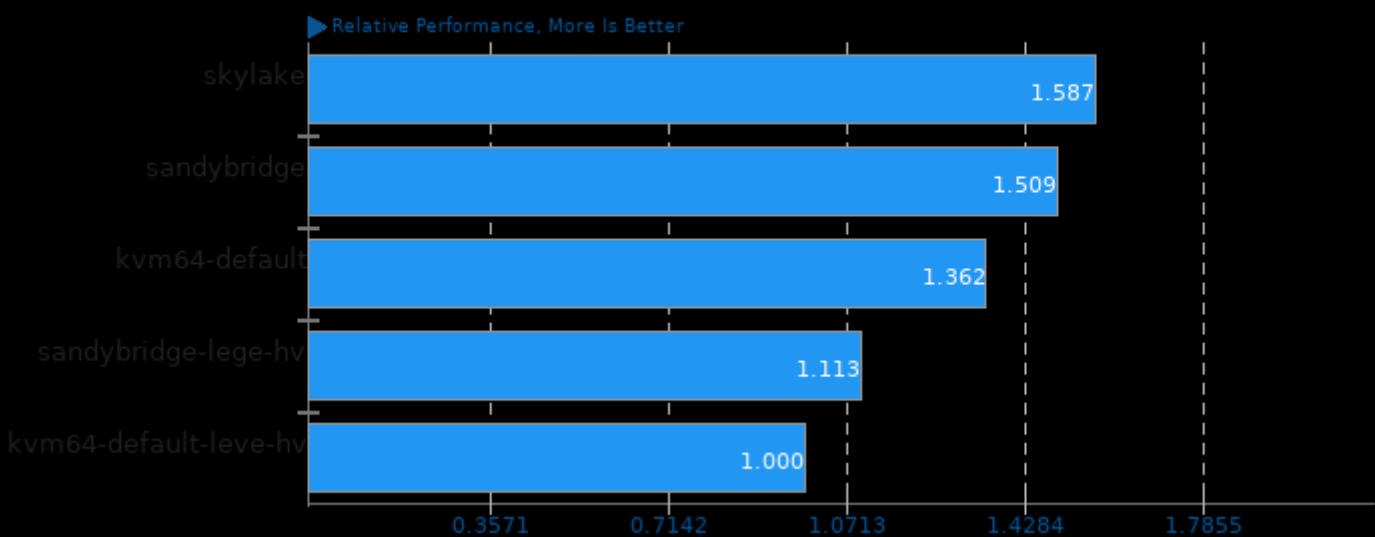
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/sysbench, pts/povray, pts/stockfish, pts/x264, pts/x265, pts/rodinia, pts/namd, pts/asmfish, pts/compress-7zip and pts/build-gcc

Geometric Mean Of Server CPU Tests

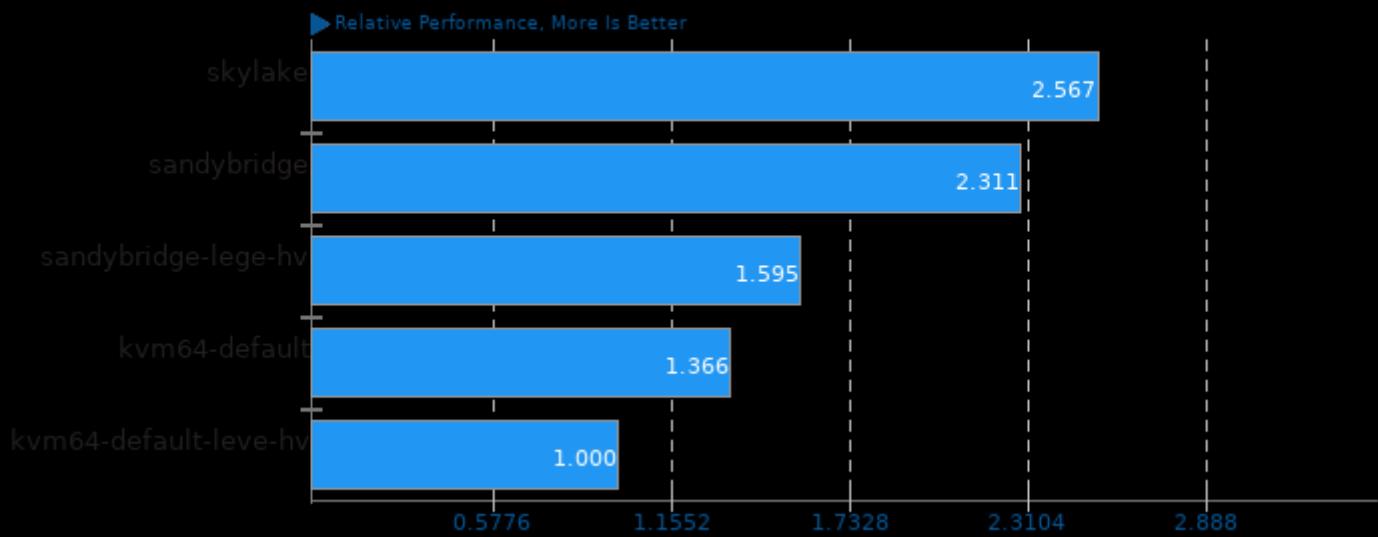
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/rodinia, pts/namd, pts/x264, pts/x265, pts/compress-7zip, pts/stockfish, pts/asmfish, pts/build-gcc, pts/povray, pts/openssl, pts/glibc-bench, pts/ctx-clock and pts/sysbench

Geometric Mean Of Video Encoding Tests

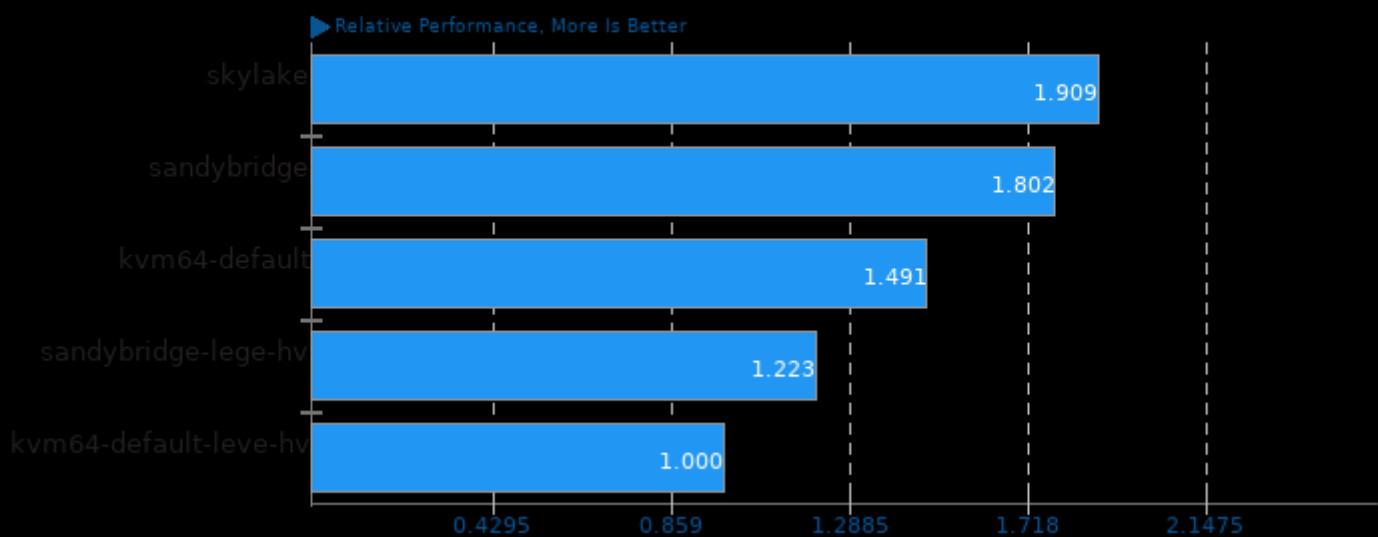
Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/x264 and pts/x265

Geometric Mean Of Common Workstation Benchmarks Tests

Result Composite - cpu-model-tests



Geometric mean based upon tests: pts/rodinia, pts/x265 and pts/sysbench

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 15:26.