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m6gd.16xlarge

ARMv8 Neoverse-N1 testing on Debian 10 via the Phoronix Test Suite.

Automated Executive Summary

m6gd.16xlarge had the most wins, coming in first place for 50% of the tests.

Based on the geometric mean of all complete results, the fastest (m6g.16xlarge) was 1.007x the speed of the slowest (m6gd.16xlarge).

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

Timed GDB GNU Debugger Compilation (Time To Compile) at 1.013x

Timed Node.js Compilation (Time To Compile) at 1.009x

Timed FFmpeg Compilation (Time To Compile) at 1.008x

John The Ripper (Test: MD5) at 1.006x

Build2 (Time To Compile) at 1.006x

GraphicsMagick (Operation: Swirl) at 1.003x

dav1d (Video Input: Summer Nature 4K) at 1.001x

John The Ripper (Test: Blowfish) at 1.001x

Basis Universal (Settings: UASTC Level 3) at 1.001x

OpenSSL (Algorithm: SHA256) at 1.001x.

Test Systems:

m6gd.16xlarge

Processor: ARMv8 Neoverse-N1 (64 Cores), Motherboard: Amazon EC2 m6gd.16xlarge (1.0 BIOS), Chipset: Amazon Device 0200, Memory: 248GB, Disk: 107GB Amazon Elastic Block Store + 2 x 1900GB Amazon EC2 NVMe Instance Storage, Network: Amazon Elastic

OS: Debian 10, Kernel: 4.19.0-14-arm64 (aarch64), Compiler: GCC 8.3.0, File-System: ext4

Kernel Notes: Transparent Huge Pages: always
 Compiler Notes: --build=aarch64-linux-gnu --disable-libphobos --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v

Python Notes: Python 2.7.16 + Python 3.7.3

Security Notes: itlb_multithit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Not affected + srbds: Not affected + tsx_async_abort: Not affected

m6g.16xlarge

Processor: ARMv8 Neoverse-N1 (64 Cores), Motherboard: Amazon EC2 m6g.16xlarge (1.0 BIOS), Chipset: Amazon Device 0200, Memory: 248GB, Disk: 107GB Amazon Elastic Block Store, Network: Amazon Elastic

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Python Notes: Python 2.7.16 + Python 3.7.3

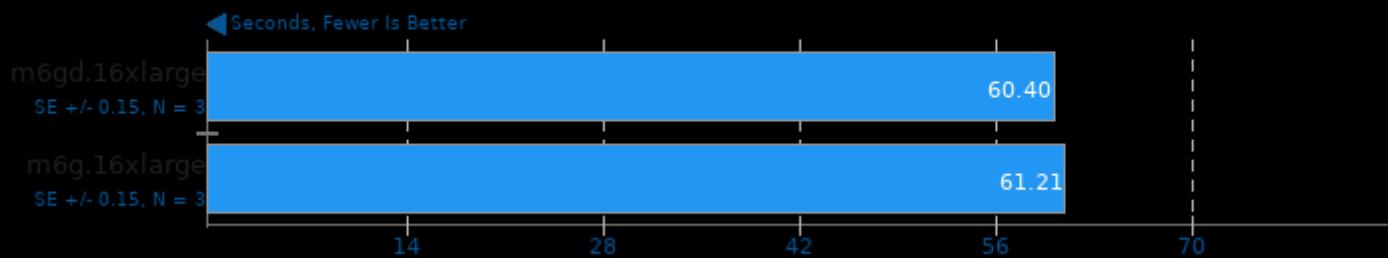
Security Notes: itlb_multithit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Not affected + srbds: Not affected + tsx_async_abort: Not affected

	m6gd.16xlarge	m6g.16xlarge
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	60.396	61.208
Normalized	100%	98.67%
Standard Deviation	0.4%	0.4%
Timed Node.js Compilation - Time To Compile (sec)	152.822	154.179
Normalized	100%	99.12%
Standard Deviation	0%	0.1%
Timed FFmpeg Compilation - Time To Compile (sec)	24.093	24.287
Normalized	100%	99.2%
Standard Deviation	2.5%	2.5%
John The Ripper - MD5 (Real C/S)	1307333	1315000
Normalized	99.42%	100%
Standard Deviation	0%	
Build2 - Time To Compile (sec)	69.542	69.928
Normalized	100%	99.45%
Standard Deviation	0.5%	0.4%

GraphicsMagick - Swirl (Iterations/min)	1804	1810
Normalized	99.67%	100%
Standard Deviation	0.8%	0.9%
dav1d - Summer Nature 4K (FPS)	277.62	277.27
Normalized	100%	99.87%
Standard Deviation	0.2%	0.4%
John The Ripper - Blowfish (Real C/S)	40737	40703
Normalized	100%	99.92%
Standard Deviation	0.1%	
Basis Universal - UASTC Level 3 (sec)	20.288	20.301
Normalized	100%	99.94%
Standard Deviation	0%	0%
OpenSSL - SHA256 (byte/s)	44216248300	44243795250
Normalized	99.94%	100%
Standard Deviation	0%	0%
7-Zip Compression - C.S.T (MIPS)	212948	213034
Normalized	99.96%	100%
Standard Deviation	0.1%	0.3%
Stress-NG - Crypto (Bogo Ops/s)	10056	10052
Normalized	100%	99.97%
Standard Deviation	0%	0%
Stress-NG - Vector Math (Bogo Ops/s)	137951	137965
Normalized	99.99%	100%
Standard Deviation	0.1%	0.1%
Basis Universal - UASTC Level 2 (sec)	14.023	14.023
Standard Deviation	0.5%	0.3%
PostgreSQL pgbench - 100 - 250 - Read Only -		332864
Average Latency (TPS)		
Standard Deviation		1.8%
GraphicsMagick - Enhanced (Iterations/min)	766	766
Standard Deviation		0.1%
GraphicsMagick - Sharpen (Iterations/min)	516	516
Standard Deviation	0.2%	
PostgreSQL pgbench - 100 - 500 - Read Only -		346794
Average Latency (TPS)		
Standard Deviation		11.4%
PostgreSQL pgbench - 100 - 500 - Read Only -	1.549	1.463
Average Latency (ms)		
Normalized	94%	99.52%
Standard Deviation	4.1%	6.3%
PostgreSQL pgbench - 100 - 500 - Read Only (TPS)	323303	342988
Normalized	94.26%	100%
Standard Deviation	4.2%	6.5%
PostgreSQL pgbench - 100 - 250 - Read Only -	0.805	0.781
Average Latency (ms)		
Normalized	93.29%	96.16%
Standard Deviation	16.6%	2.4%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	316458	320260
Normalized	98.81%	100%
Standard Deviation	12.5%	2.3%

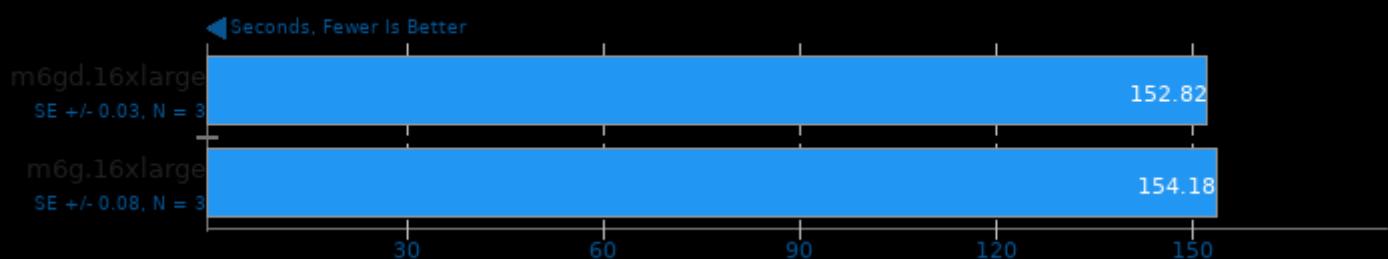
Timed GDB GNU Debugger Compilation 10.2

Time To Compile



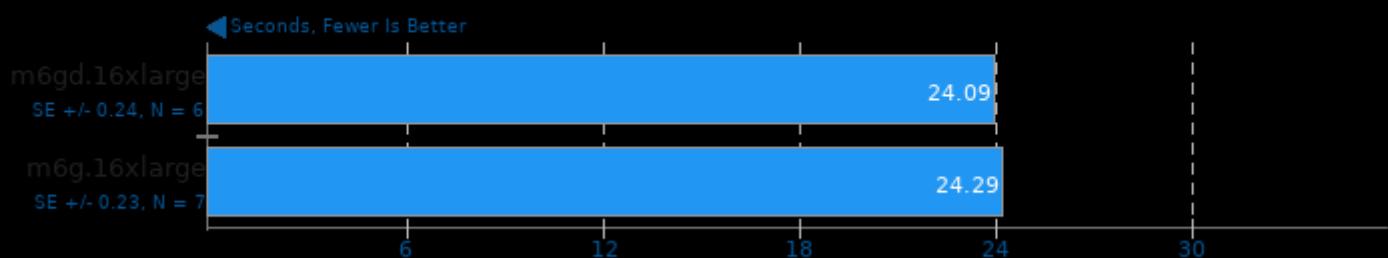
Timed Node.js Compilation 15.11

Time To Compile



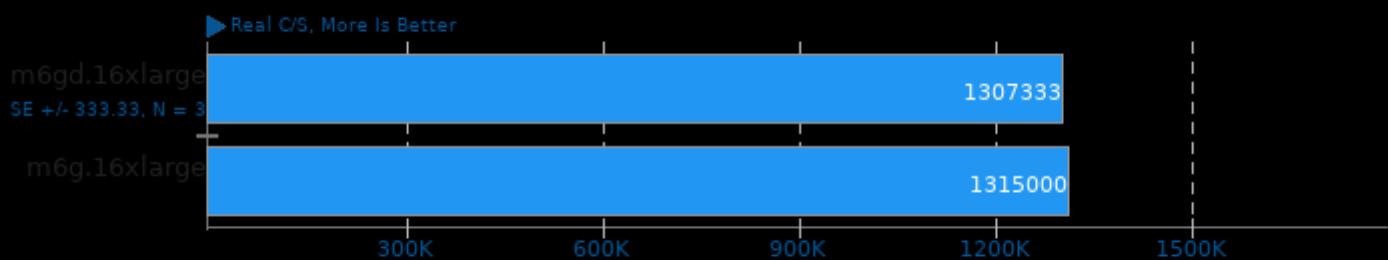
Timed FFmpeg Compilation 4.4

Time To Compile



John The Ripper 1.9.0-jumbo-1

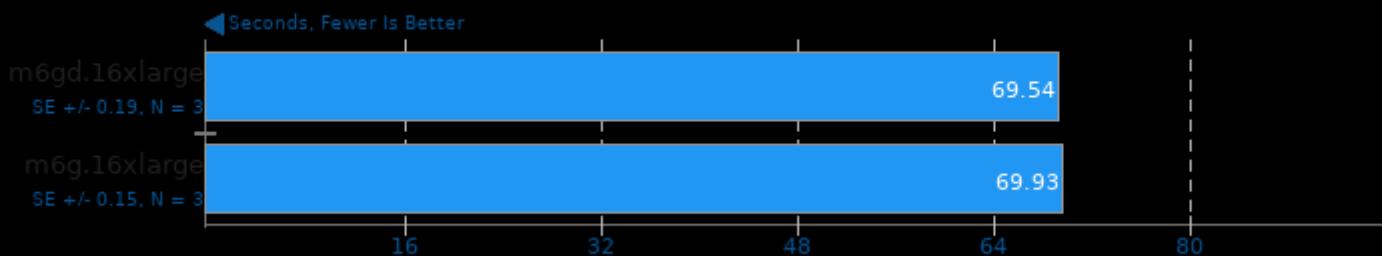
Test: MD5



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

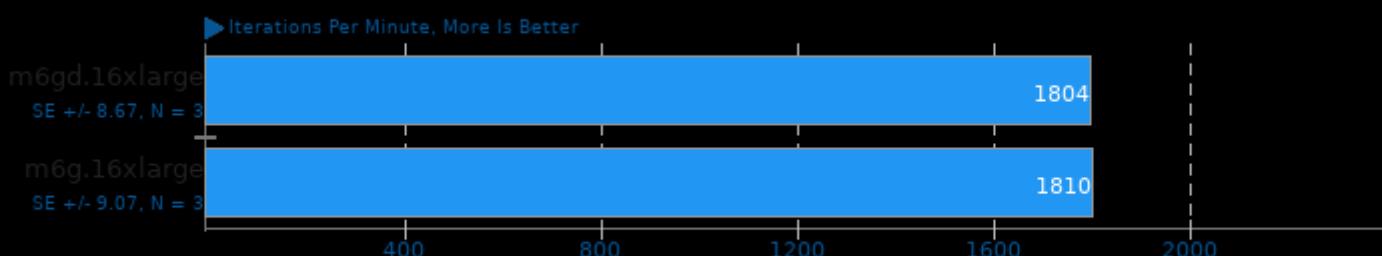
Build2 0.13

Time To Compile



GraphicsMagick 1.3.33

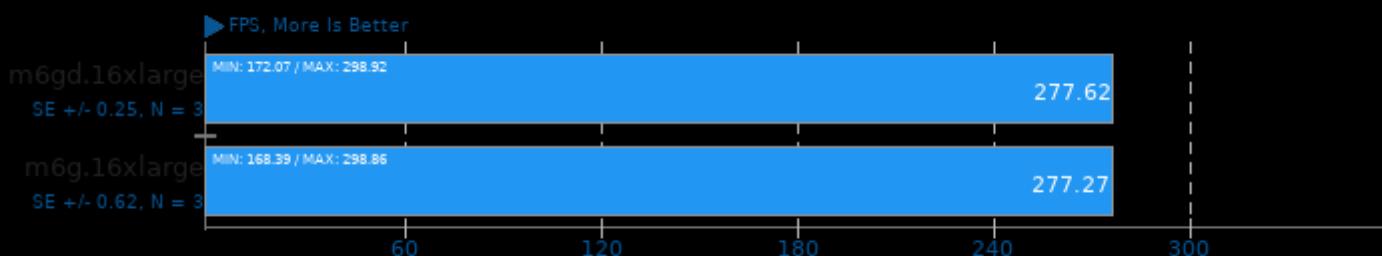
Operation: Swirl



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

dav1d 0.9.2

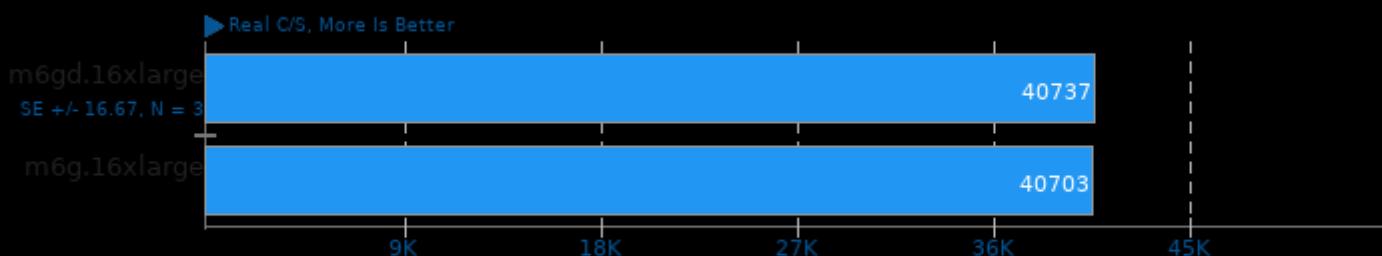
Video Input: Summer Nature 4K



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

John The Ripper 1.9.0-jumbo-1

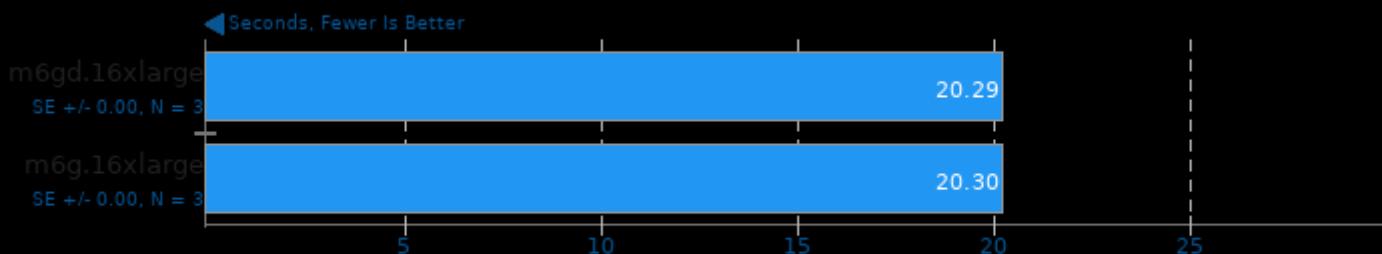
Test: Blowfish



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

Basis Universal 1.13

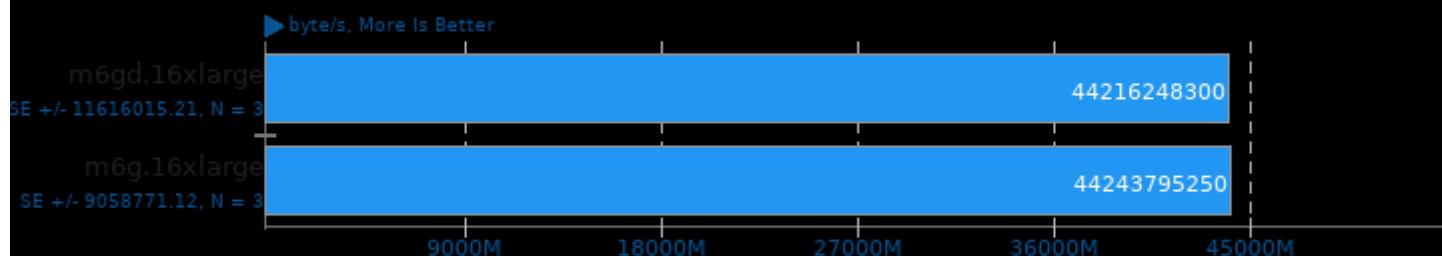
Settings: UASTC Level 3



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

OpenSSL 3.0

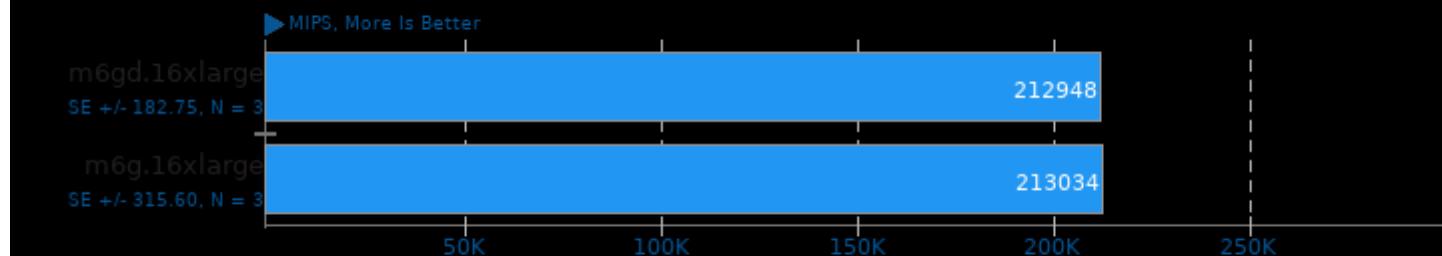
Algorithm: SHA256



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

7-Zip Compression 16.02

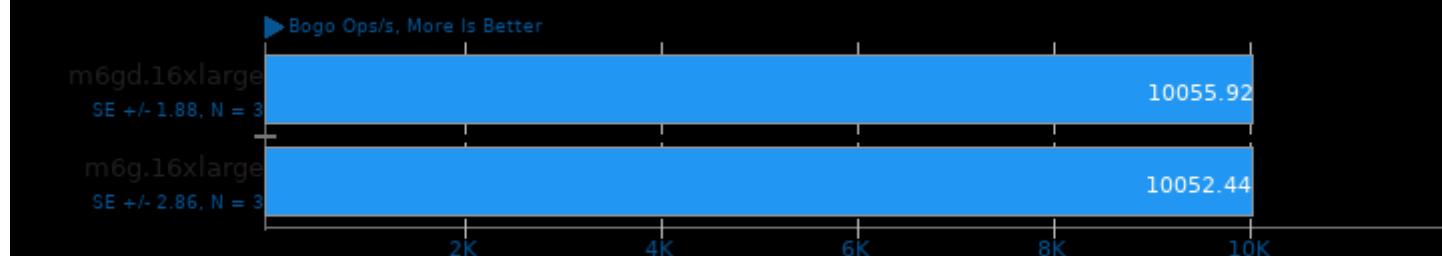
Compress Speed Test



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

Stress-NG 0.13.02

Test: Crypto

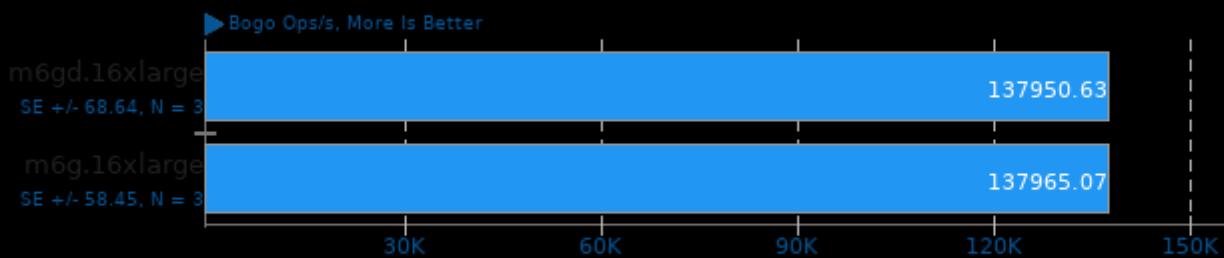


1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

m6gd.16xlarge

Stress-NG 0.13.02

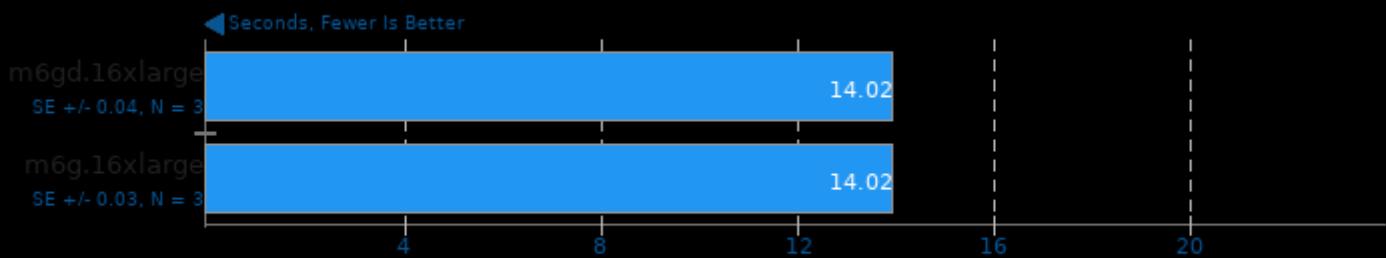
Test: Vector Math



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

Basis Universal 1.13

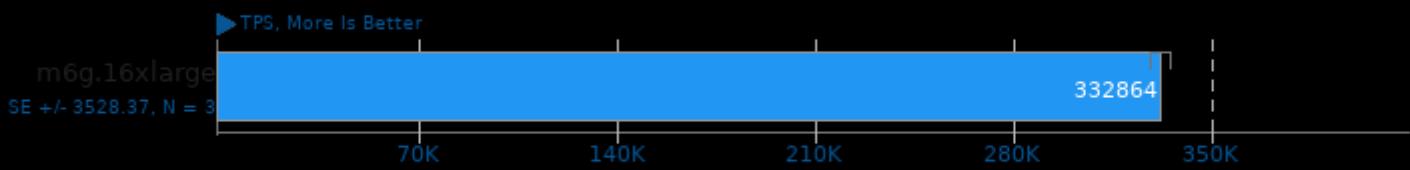
Settings: UASTC Level 2



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

PostgreSQL pgbench 14.0

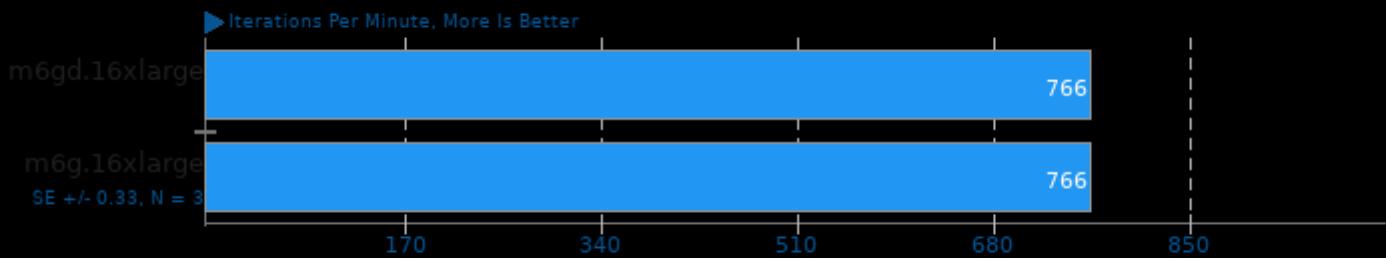
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpqport -lpq -pthread -lrt -ldl -lm

GraphicsMagick 1.3.33

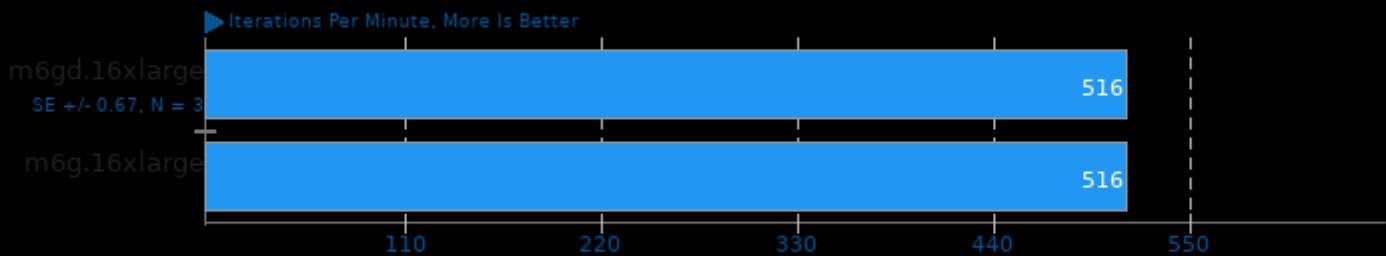
Operation: Enhanced



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

GraphicsMagick 1.3.33

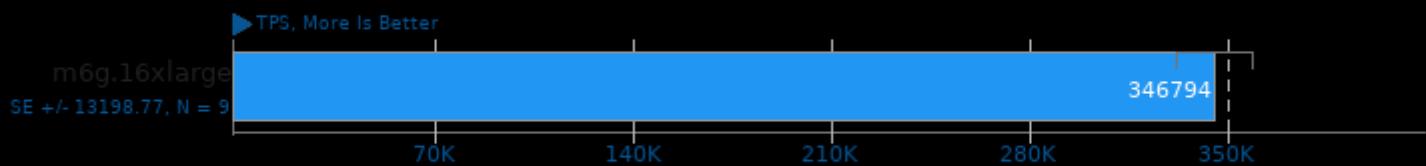
Operation: Sharpen



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

PostgreSQL pgbench 14.0

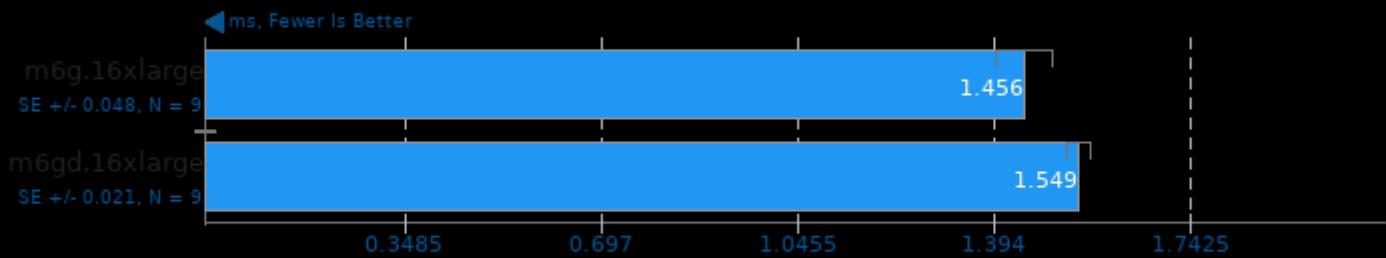
Scaling Factor: 100 - Clients: 500 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 14.0

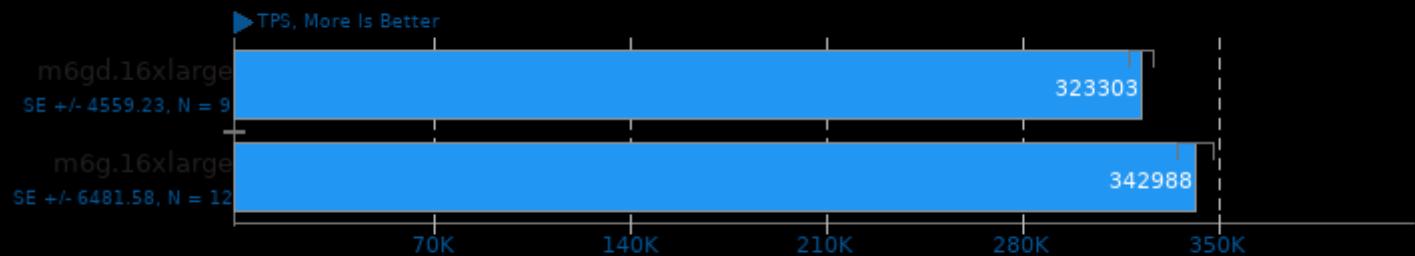
Scaling Factor: 100 - Clients: 500 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 14.0

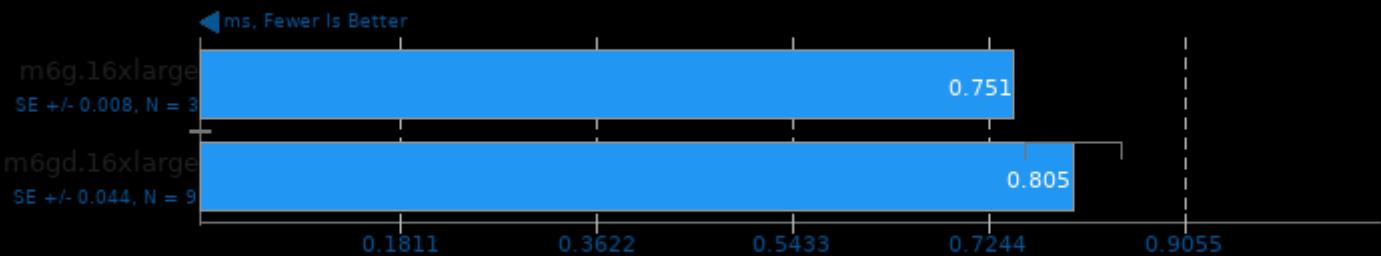
Scaling Factor: 100 - Clients: 500 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 14.0

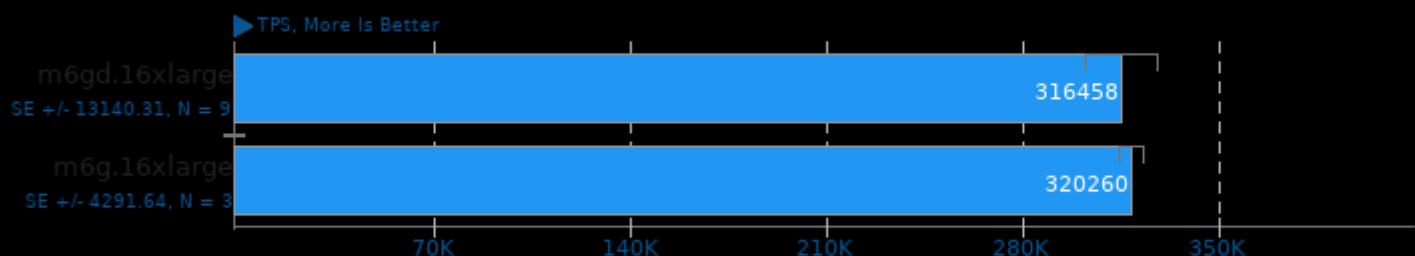
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -pthread -lrt -ldl -lm

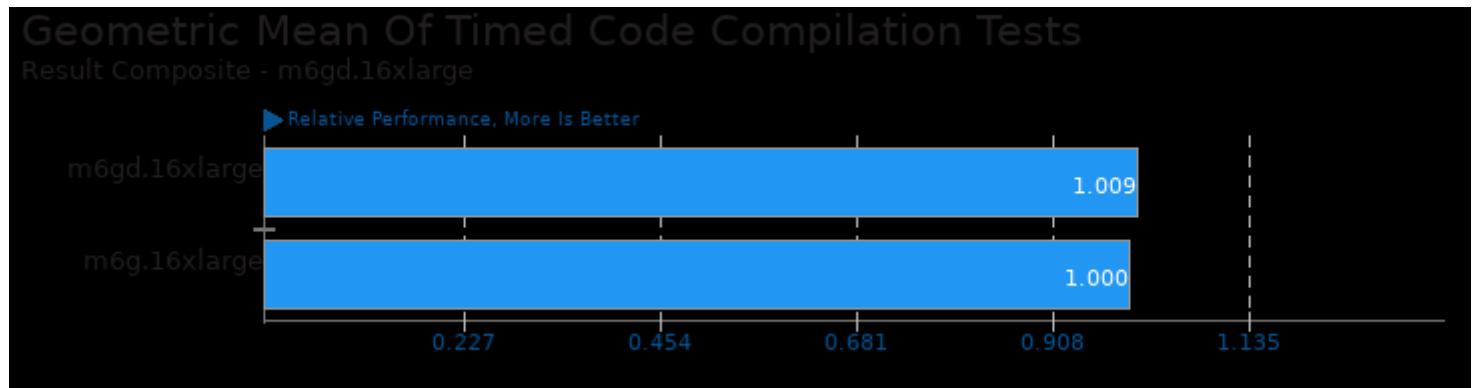
PostgreSQL pgbench 14.0

Scaling Factor: 100 - Clients: 250 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -pthread -lrt -ldl -lm

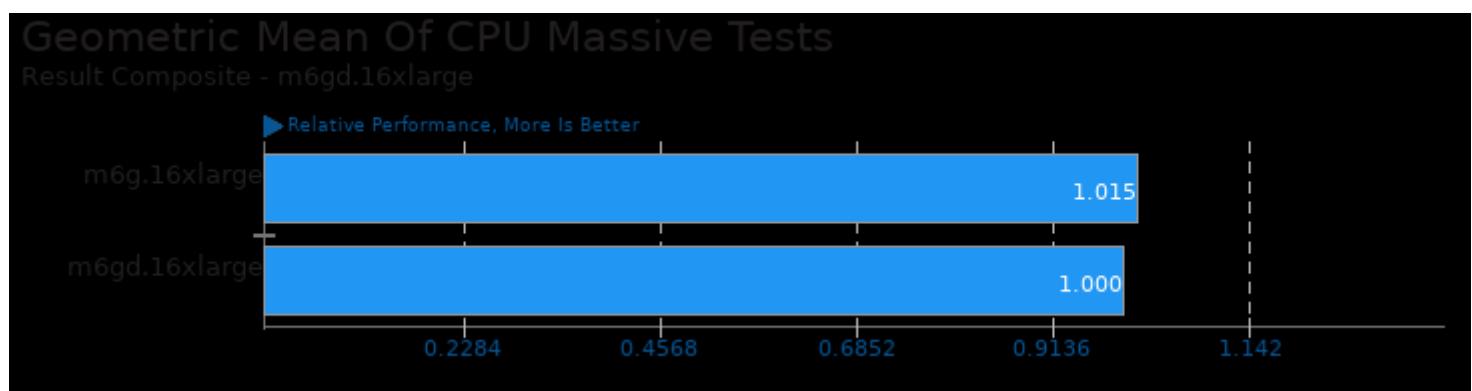
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/build-gdb, pts/build-ffmpeg, pts/build2 and pts/build-nodejs



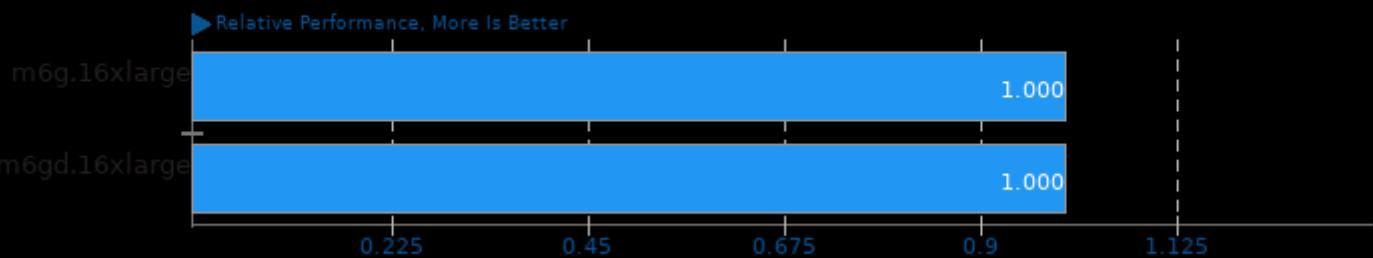
Geometric mean based upon tests: pts/graphics-magick, pts/compress-7zip, pts/pgbench, pts/john-the-ripper, pts/dav1d, pts/openssl, pts/build-gdb, pts/build-ffmpeg and pts/basis



Geometric mean based upon tests: pts/compress-7zip, pts/dav1d, pts/graphics-magick, pts/john-the-ripper, pts/openssl, pts/pgbench and pts/stress-ng

Geometric Mean Of Creator Workloads Tests

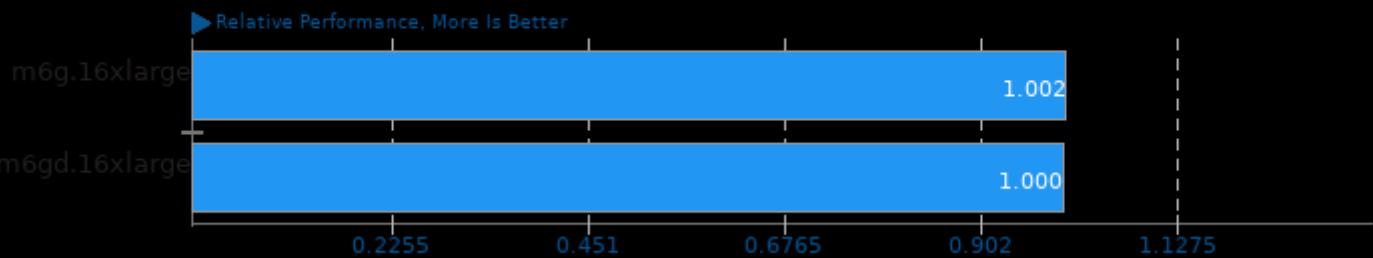
Result Composite - m6gd.16xlarge



Geometric mean based upon tests: pts/dav1d, pts/graphics-magick and pts/basis

Geometric Mean Of Cryptography Tests

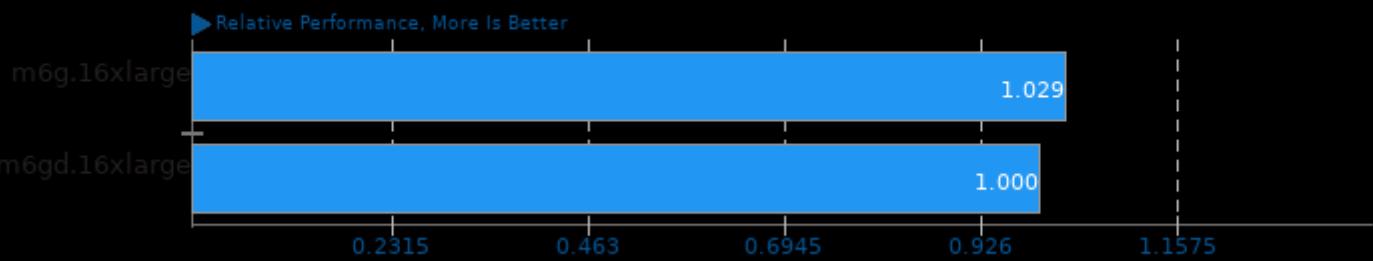
Result Composite - m6gd.16xlarge



Geometric mean based upon tests: pts/openssl and pts/john-the-ripper

Geometric Mean Of Common Kernel Benchmarks Tests

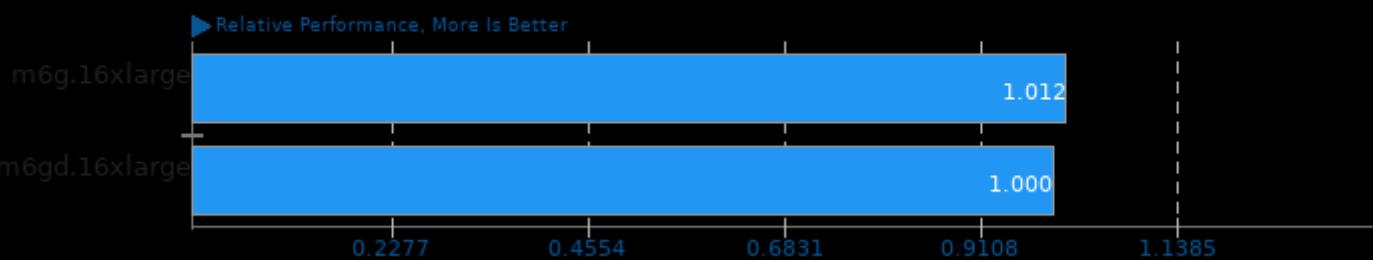
Result Composite - m6gd.16xlarge



Geometric mean based upon tests: pts/pgbench, pts/openssl and pts/stress-ng

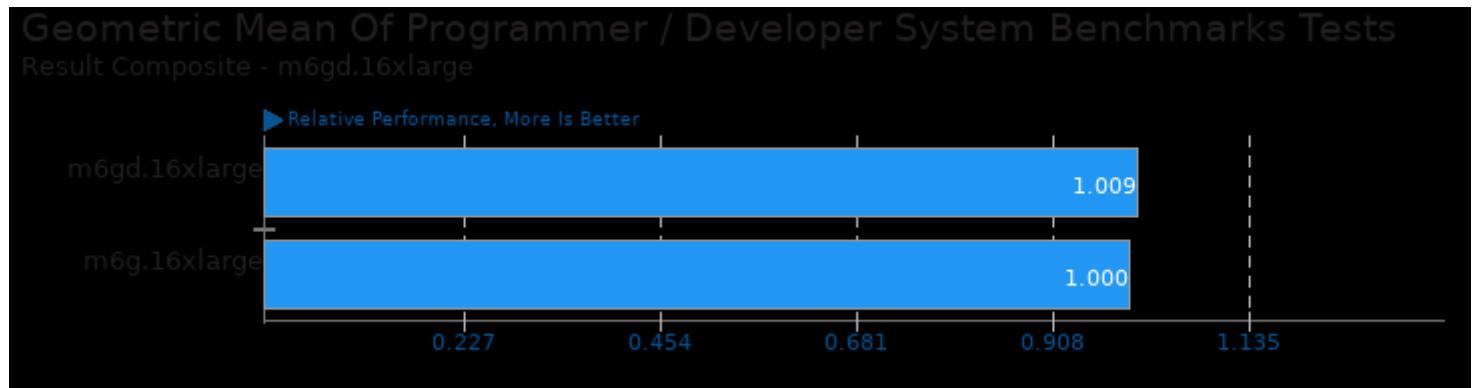
Geometric Mean Of Multi-Core Tests

Result Composite - m6gd.16xlarge



Geometric mean based upon tests: pts/dav1d, pts/john-the-ripper, pts/graphics-magick, pts/compress-7zip,

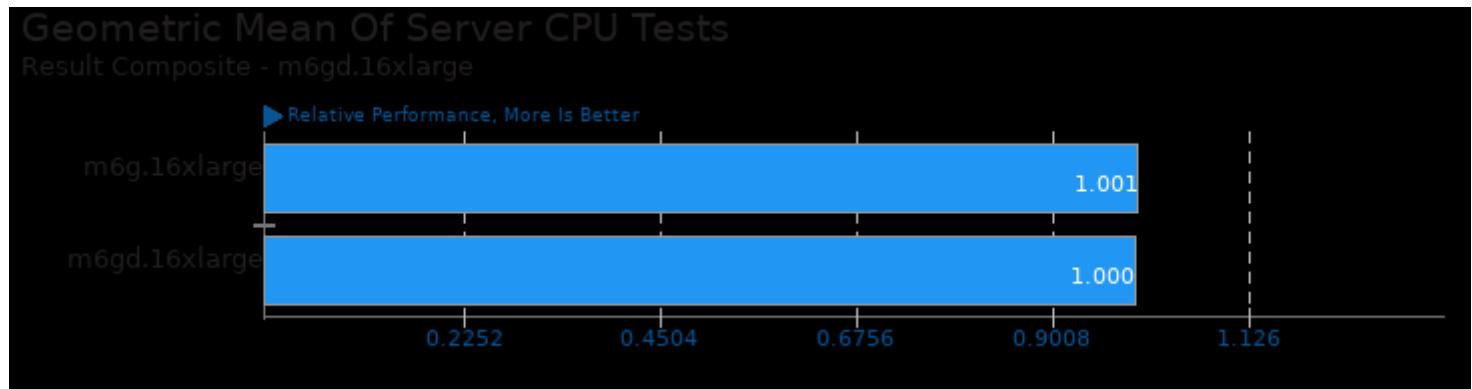
pts/build-gdb, pts/build-ffmpeg, pts/build2, pts/build-nodejs and pts/pgbench



Geometric mean based upon tests: pts/build-gdb, pts/build-ffmpeg, pts/build2 and pts/build-nodejs



Geometric mean based upon tests: pts/pgbench and pts/openssl



Geometric mean based upon tests: pts/john-the-ripper, pts/dav1d, pts/compress-7zip, pts/openssl and pts/stress-ng

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 08:47.