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LLVM Clang AMD FX-8350 Vishera Bulldozer 2

AMD FX-8350 Eight-Core testing of LLVM/Clang using Ubuntu 13.04 Linux. Benchmarking by Michael Larabel for a future article on Phoronix.com.

Automated Executive Summary

GCC 4.7.3 had the most wins, coming in first place for 81% of the tests.

Based on the geometric mean of all complete results, the fastest (GCC 4.7.3) was 1.749x the speed of the slowest (LLVM Clang 3.2). LLVM Clang 3.3 SVN was 0.577x the speed of GCC 4.7.3 and LLVM Clang 3.2 was 0.991x the speed of LLVM Clang 3.3 SVN.

Test Systems:

LLVM Clang 3.2

Processor: AMD FX-8350 Eight-Core @ 4.00GHz (8 Cores), Motherboard: ASUS Crosshair V Formula, Chipset: AMD ATI RD890 bridge, Memory: 8192MB, Disk: 60GB OCZ VERTEX2, Graphics: NVIDIA GeForce GT 520 1024MB

(810/500MHz), Audio: Realtek ALC889, Network: Intel 82583V Gigabit Connection

OS: Ubuntu 13.04, Kernel: 3.9.0-999-generic (x86_64), Desktop: Xfce 4.10, Display Server: X Server 1.13.3, Display Driver: NVIDIA 319.12, OpenGL: 4.3.0, Compiler: Clang 3.2 + LLVM 3.2svn, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: Optimized build; Built Apr 23 2013 (08:32:02); Default target: x86_64-unknown-linux-gnu; Host CPU: bdver1
Processor Notes: Scaling Governor: ondemand

LLVM Clang 3.3 SVN

Processor: AMD FX-8350 Eight-Core @ 4.00GHz (8 Cores), Motherboard: ASUS Crosshair V Formula, Chipset: AMD ATI RD890 bridge, Memory: 8192MB, Disk: 60GB OCZ VERTEX2, Graphics: NVIDIA GeForce GT 520 1024MB (810/500MHz), Audio: Realtek ALC889, Network: Intel 82583V Gigabit Connection

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GCC 4.7.3

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OS: Ubuntu 13.04, Kernel: 3.9.0-999-generic (x86_64), Desktop: Xfce 4.10, Display Server: X Server 1.13.3, Display Driver: NVIDIA 319.12, OpenGL: 4.3.0, Compiler: GCC 4.7 + Clang 3.3-1~exp1 + LLVM 3.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-cloog-version-check --disable-ppl-version-check --disable-werror --enable-checking=release --enable-clocale=gnu --enable-cloog-backend=ppl --enable-gnu-unique-object --enable-languages=c,c++,go,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-cloog --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: ondemand

	LLVM Clang 3.2	LLVM Clang 3.3 SVN	GCC 4.7.3
Timed HMMer Search - P.D.S (sec)	**12.91**	12.35	**11.21**
Normalized	86.83%	90.77%	100%
Standard Deviation	1.7%	3.4%	4.4%
Timed MAFFT Alignment - M.S.A (sec)	6.84	**6.99**	**6.20**
Normalized	90.64%	88.7%	100%
Standard Deviation	0.5%	4.2%	3.7%
BLAKE2 - P.T.S.v.6.0 (Cycles/Byte)	9.65	**9.71**	**9.09**
Normalized	94.2%	93.61%	100%
Standard Deviation	0.2%	1.5%	0%
John The Ripper - Blowfish (Real C/S)	**884**	893	**7089**
Normalized	12.47%	12.6%	100%
Standard Deviation	0.5%	0.1%	0.2%

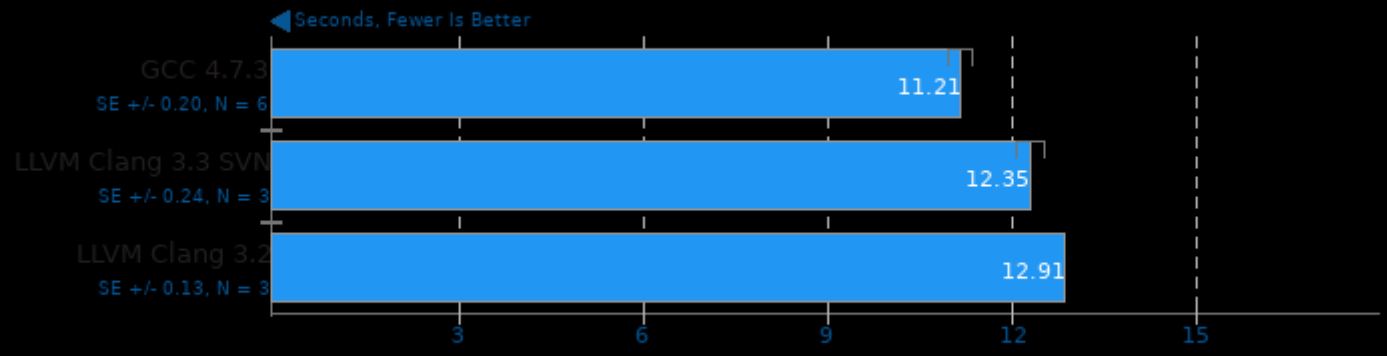
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John The Ripper - Traditional DES (Real C/S)	**4097000**	4104000	**18670000**
Normalized	21.94%	21.98%	100%
Standard Deviation	0.1%	0.3%	0.5%
John The Ripper - MD5 (Real C/S)	**29960**	**34733**	31988
Normalized	86.26%	100%	92.1%
Standard Deviation	0.5%	0.1%	0%
GraphicsMagick - Blur (Iterations/min)	**64**	**64**	**119**
Normalized	53.78%	53.78%	100%
Standard Deviation	0%	0%	0.5%
GraphicsMagick - Sharpen (Iterations/min)	23	**22**	**113**
Normalized	20.35%	19.47%	100%
Standard Deviation	0%	0%	0%
GraphicsMagick - Resizing (Iterations/min)	**72**	**72**	**148**
Normalized	48.65%	48.65%	100%
Standard Deviation	0%	0%	0%
GraphicsMagick - HWB Color Space (Iterations/min)	105	**104**	**160**
Normalized	65.63%	65%	100%
Standard Deviation	0%	0%	0.4%
GraphicsMagick - L.A.T (Iterations/min)	**38**	39	**98**
Normalized	38.78%	39.8%	100%
Standard Deviation	0%	0%	0%
Himeno Benchmark - P.P.S (MFLOPS)	**587.91**	657.27	**725.50**
Normalized	81.04%	90.6%	100%
Standard Deviation	0.7%	0.2%	0.1%
Timed ImageMagick Compilation - Time To Compile (sec)	**27.08**	28.45	**114.24**
Normalized	100%	95.18%	23.7%
Standard Deviation	0.4%	0.5%	0.3%
Timed PHP Compilation - Time To Compile (sec)	**19.47**	21.04	**30.82**
Normalized	100%	92.54%	63.17%
Standard Deviation	0.5%	0.5%	0%
C-Ray - Total Time (sec)	**32.86**	32.80	**23.07**
Normalized	70.21%	70.34%	100%
Standard Deviation	0%	0.1%	0.1%
Smallpt - G.I.R.1.S (sec)	**396**	395	**53**
Normalized	13.38%	13.42%	100%
Standard Deviation	0.3%	0.3%	0%

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Timed HMMer Search 2.3.2

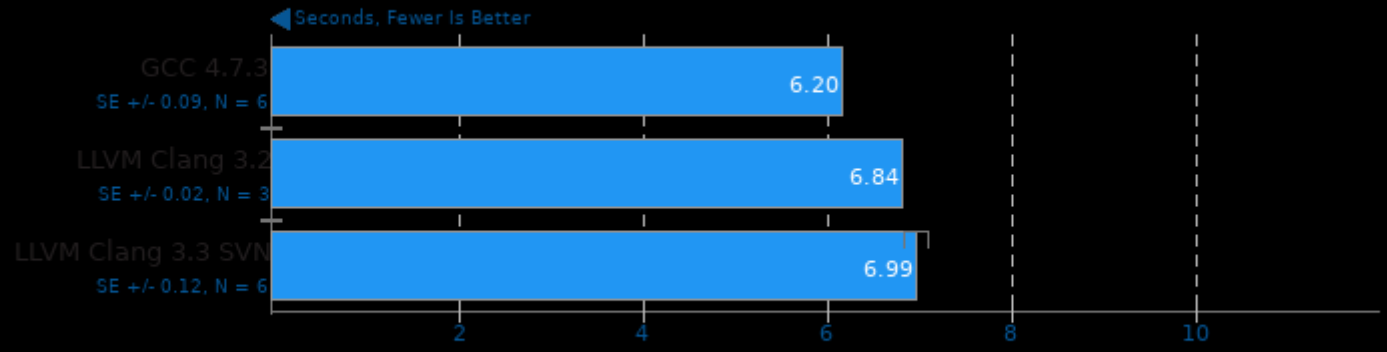
Pfam Database Search



1. (CC) gcc options: -O3 -march=native -pthread -lhmmer -lsquid -lm

Timed MAFFT Alignment 6.864

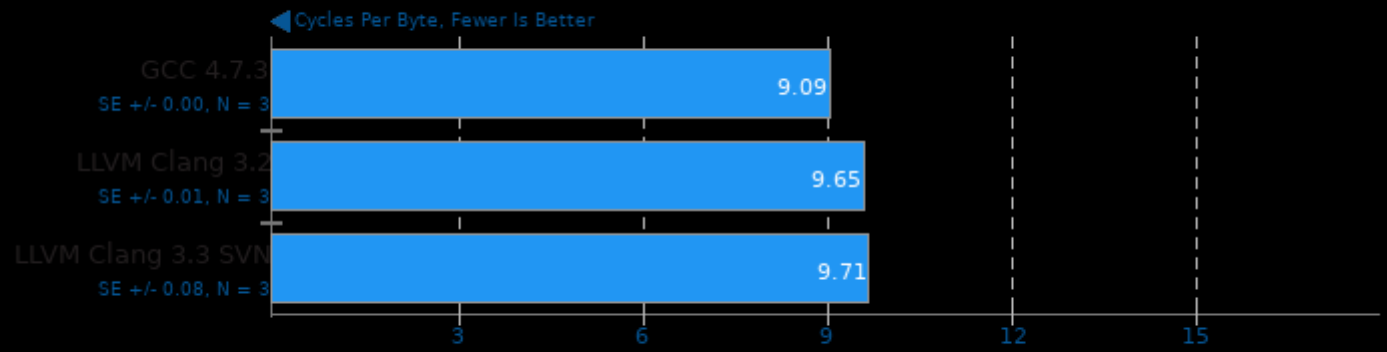
Multiple Sequence Alignment



1. (CC) gcc options: -O3 -lm -lpthread

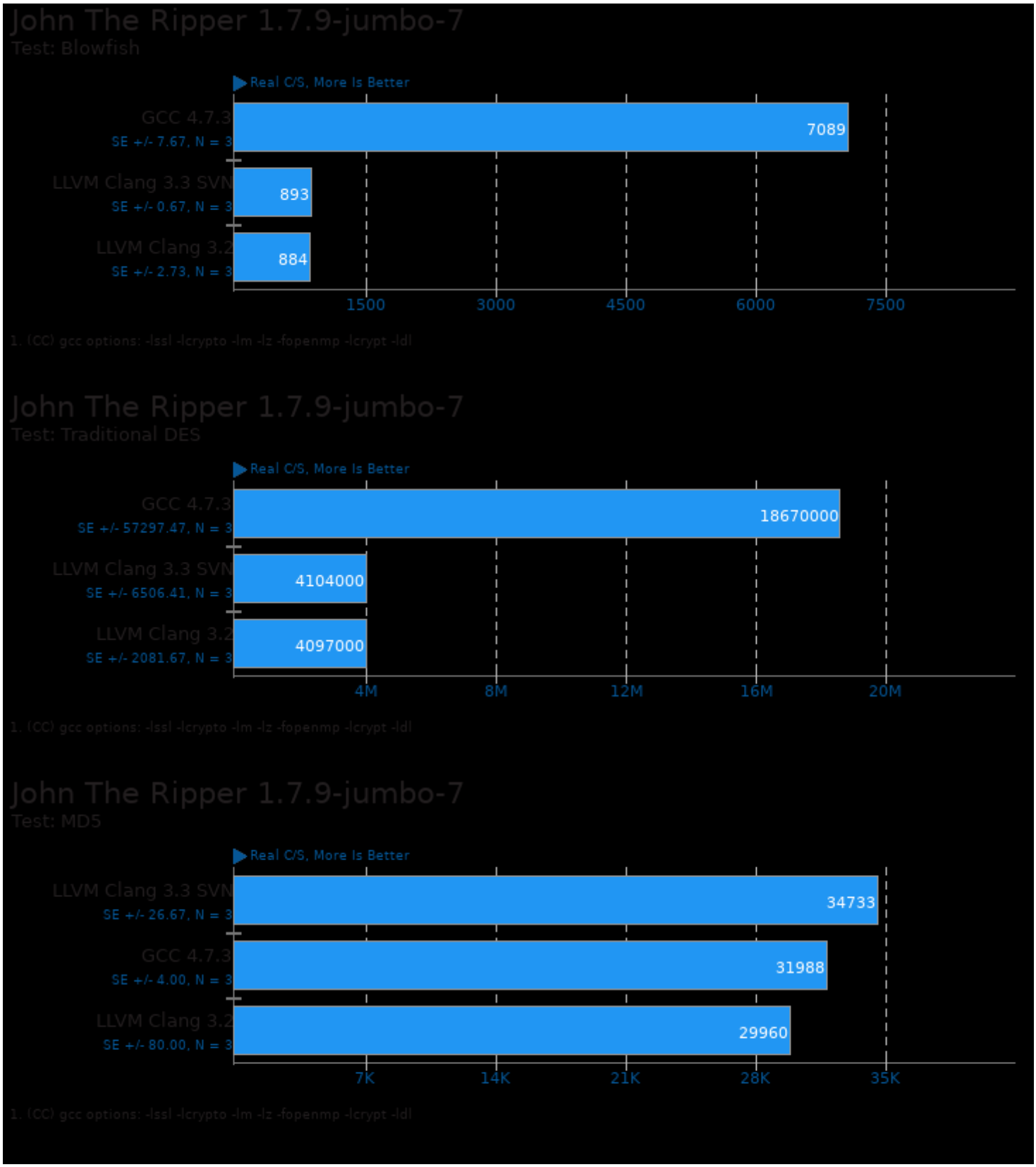
BLAKE2 20121223

Phoronix Test Suite v4.6.0m1

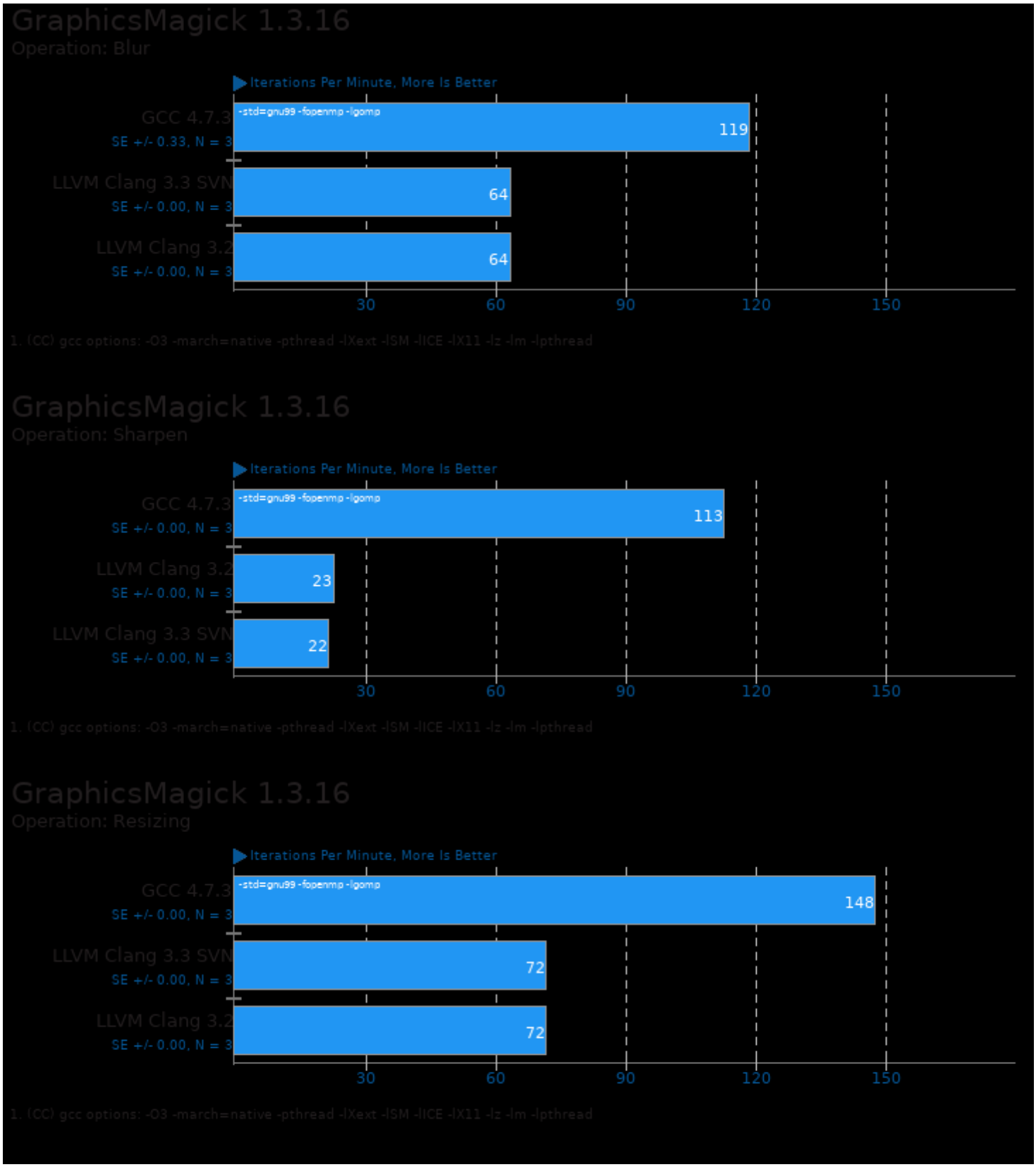


1. (CC) gcc options: -std=gnu99 -O3 -march=native

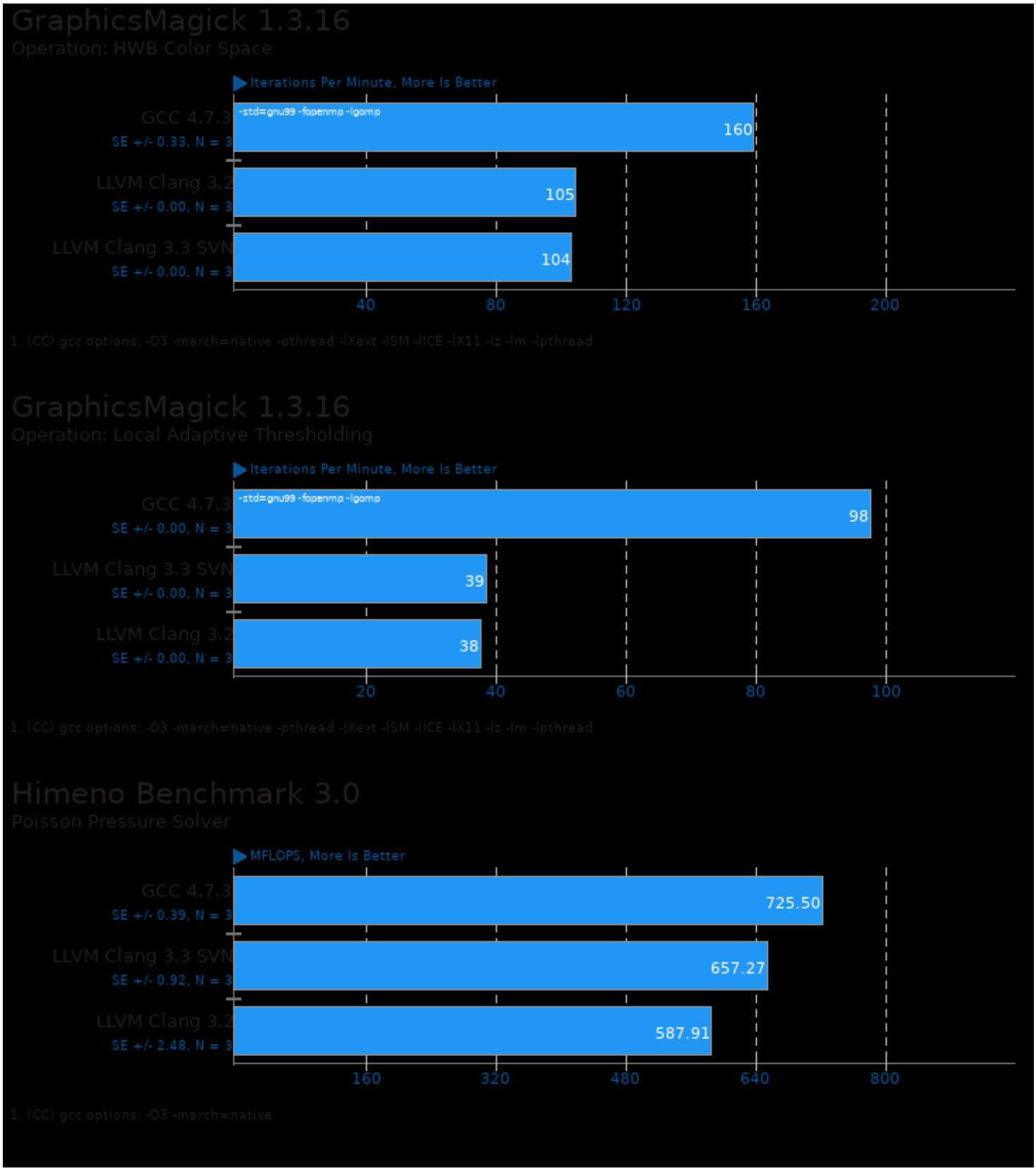
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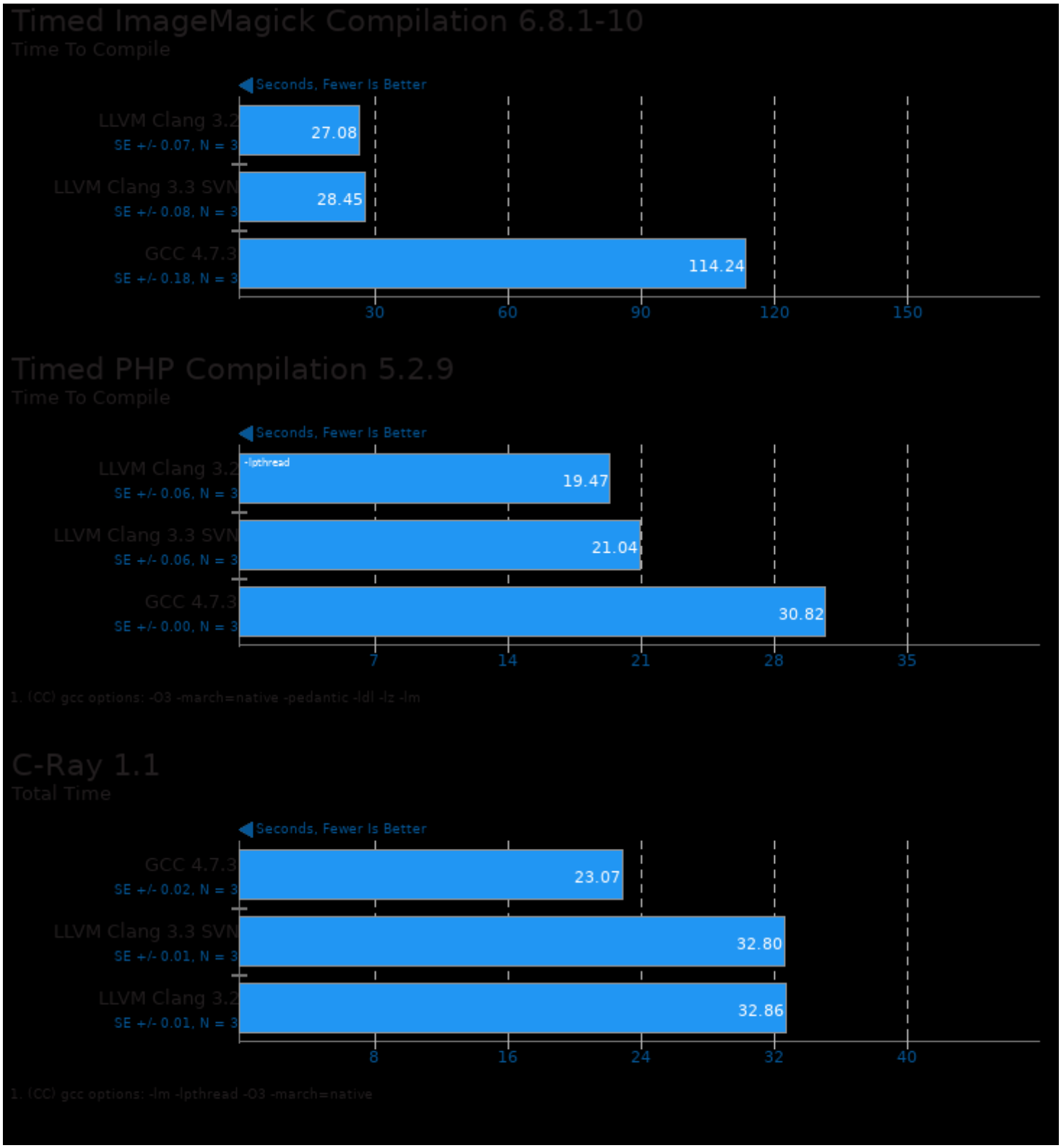
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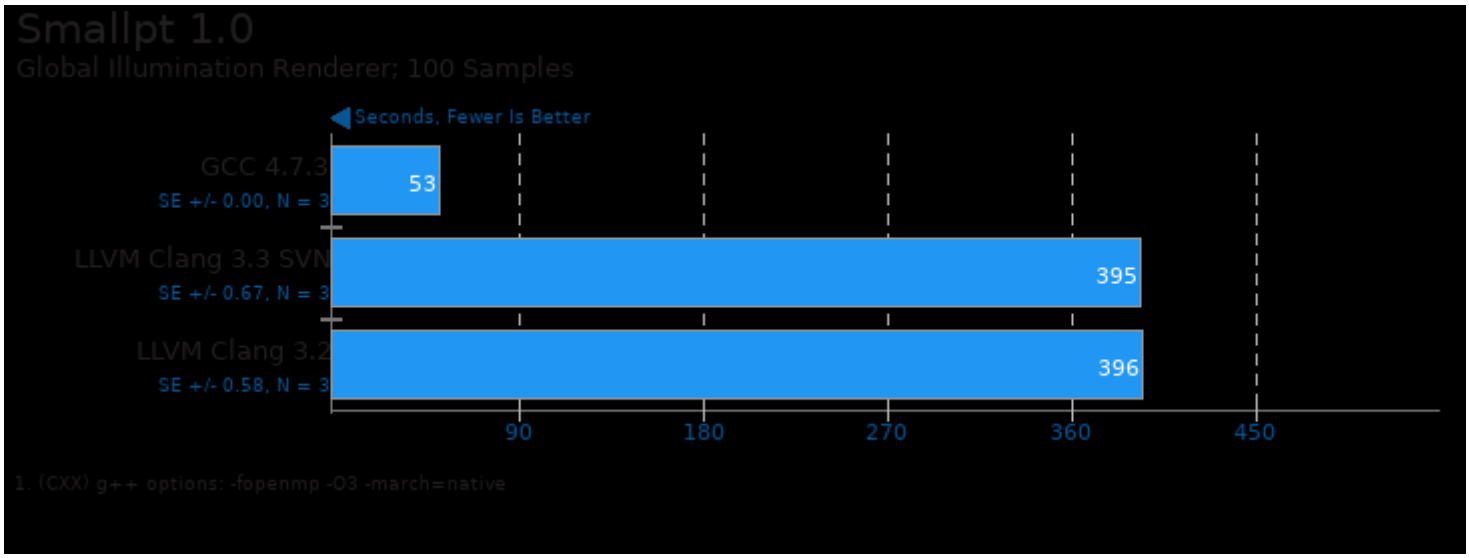
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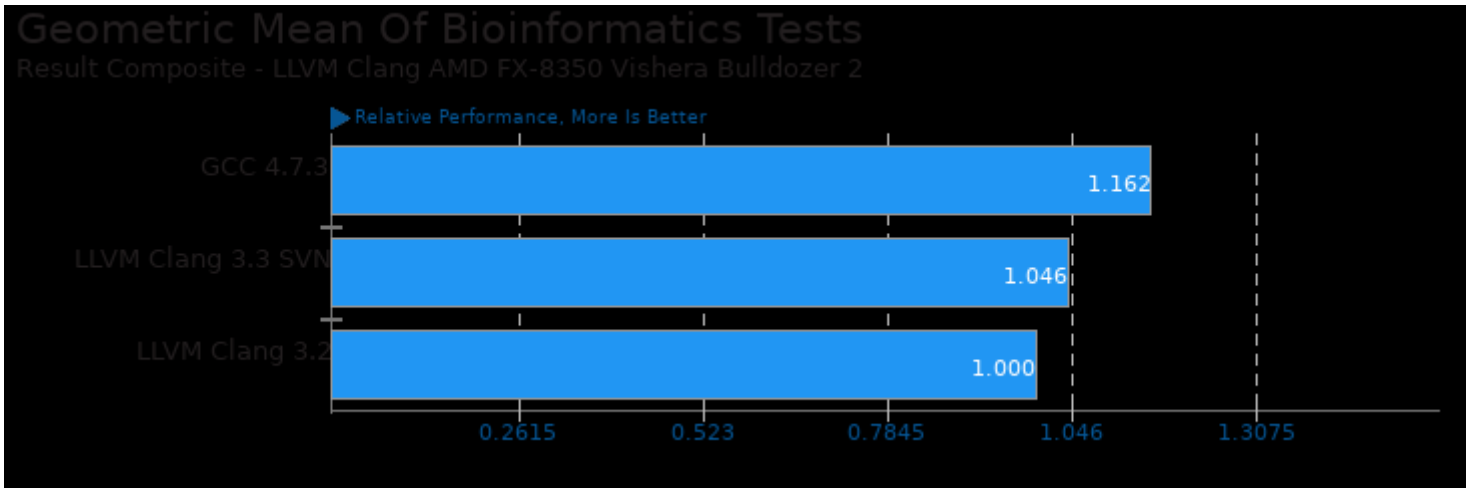


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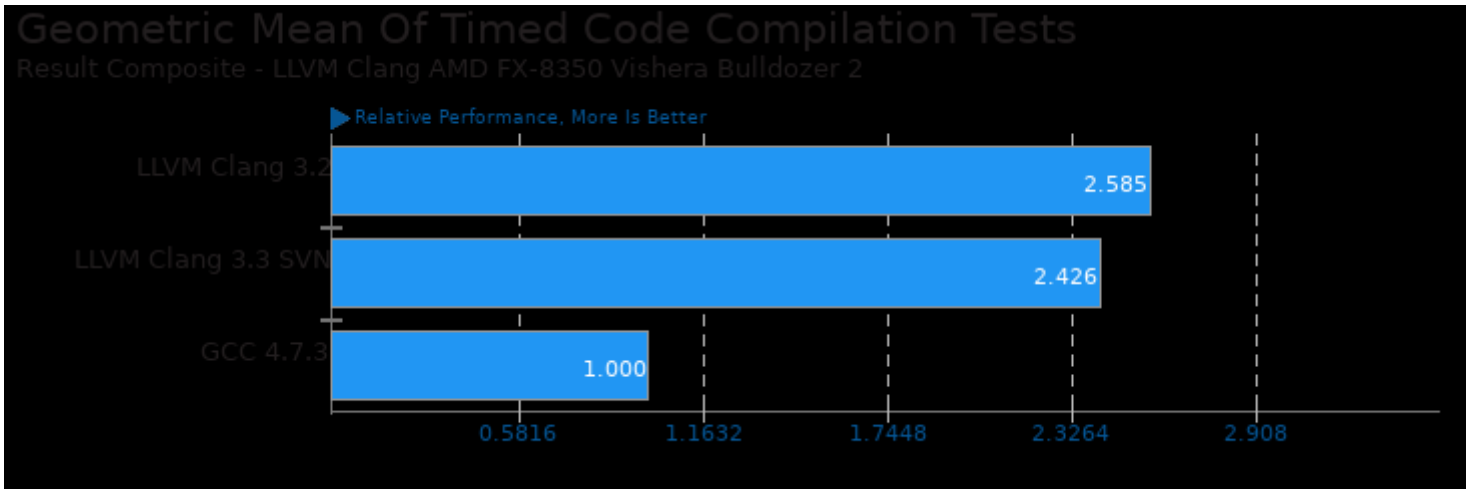


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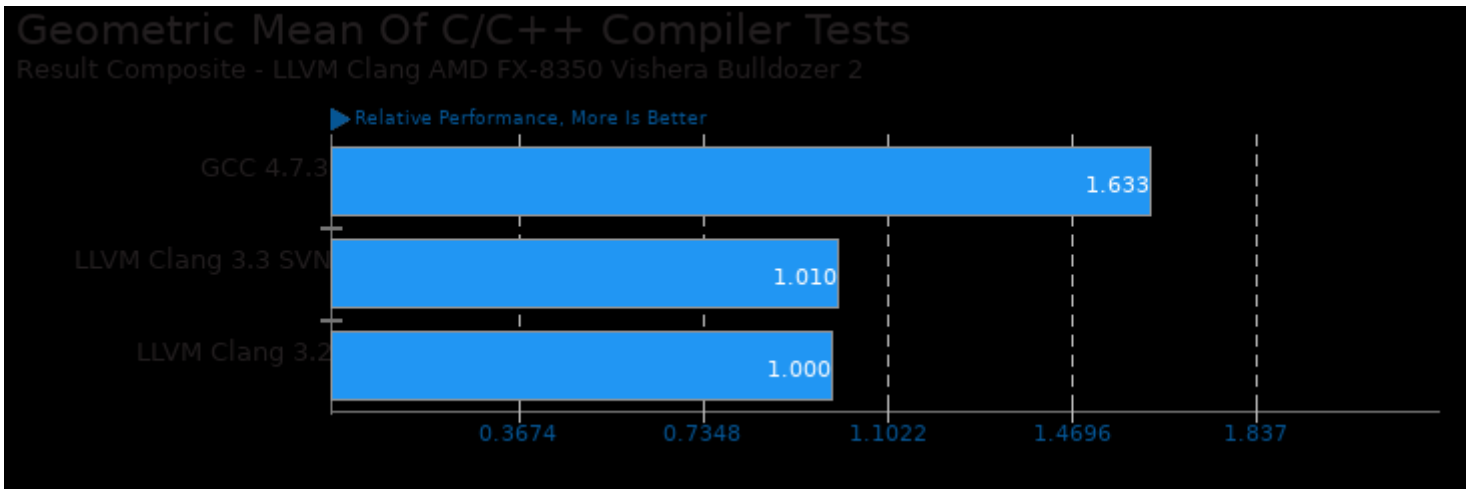
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/himeno, pts/hmmer and pts/mafft

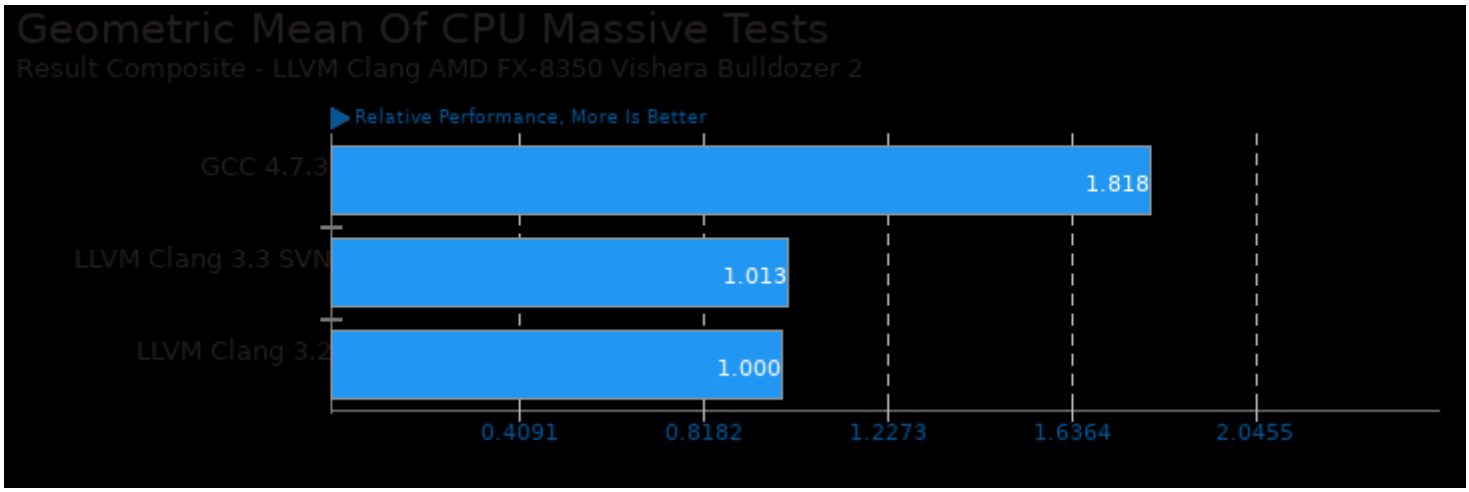


Geometric mean based upon tests: pts/build-php and pts/build-imagemagick

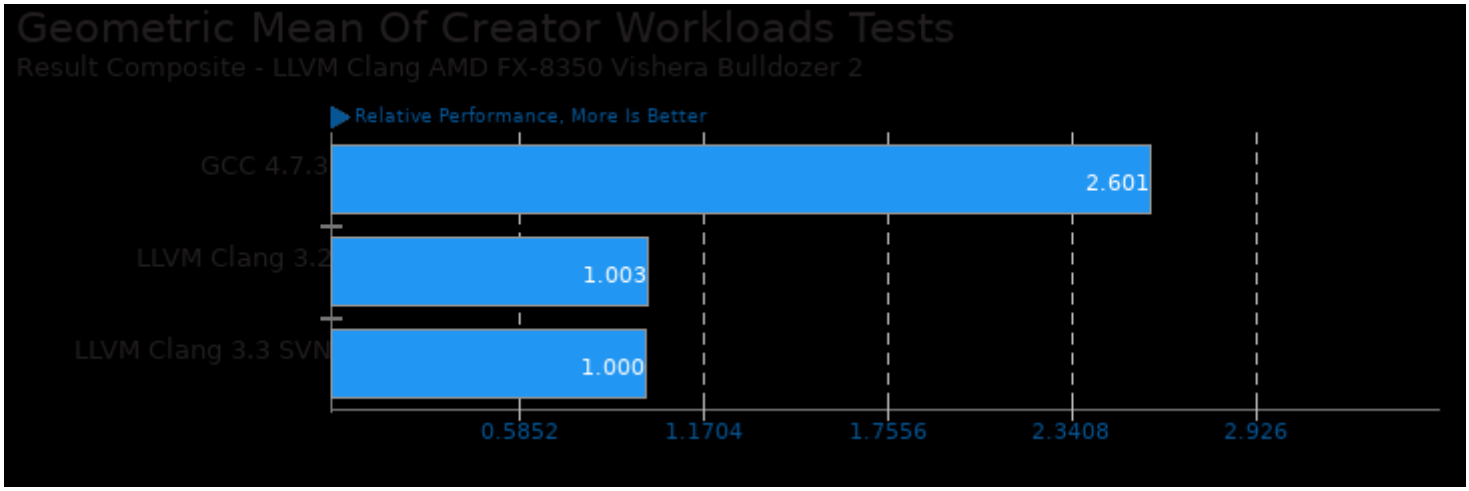


Geometric mean based upon tests: pts/mafft, pts/graphics-magick, pts/himeno, pts/hmmer, pts/build-php, pts/build-imagemagick, pts/c-ray and pts/john-the-ripper

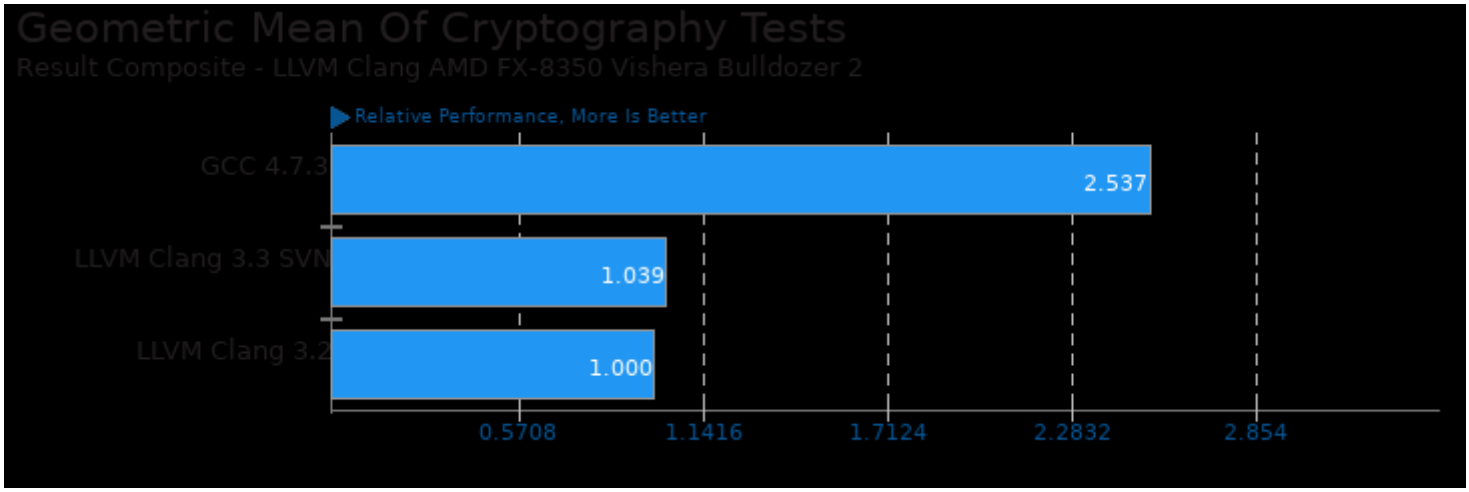
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Geometric mean based upon tests: pts/blake2, pts/build-php, pts/c-ray, pts/graphics-magick, pts/himeno, pts/hmmer, pts/john-the-ripper and pts/mafft

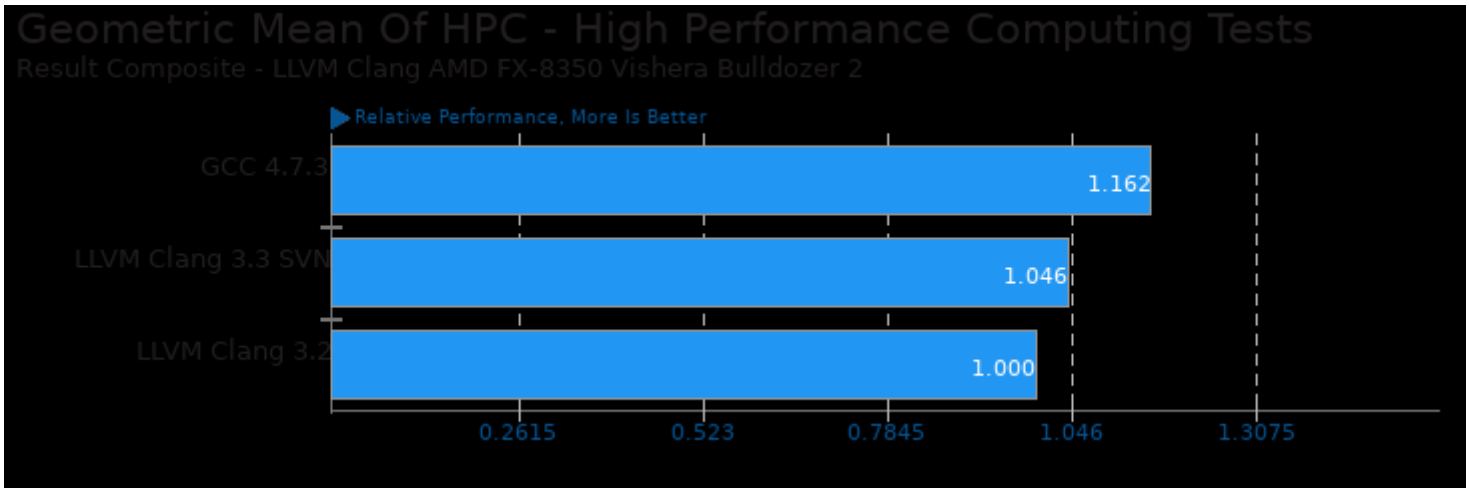


Geometric mean based upon tests: pts/c-ray, pts/smallpt and pts/graphics-magick

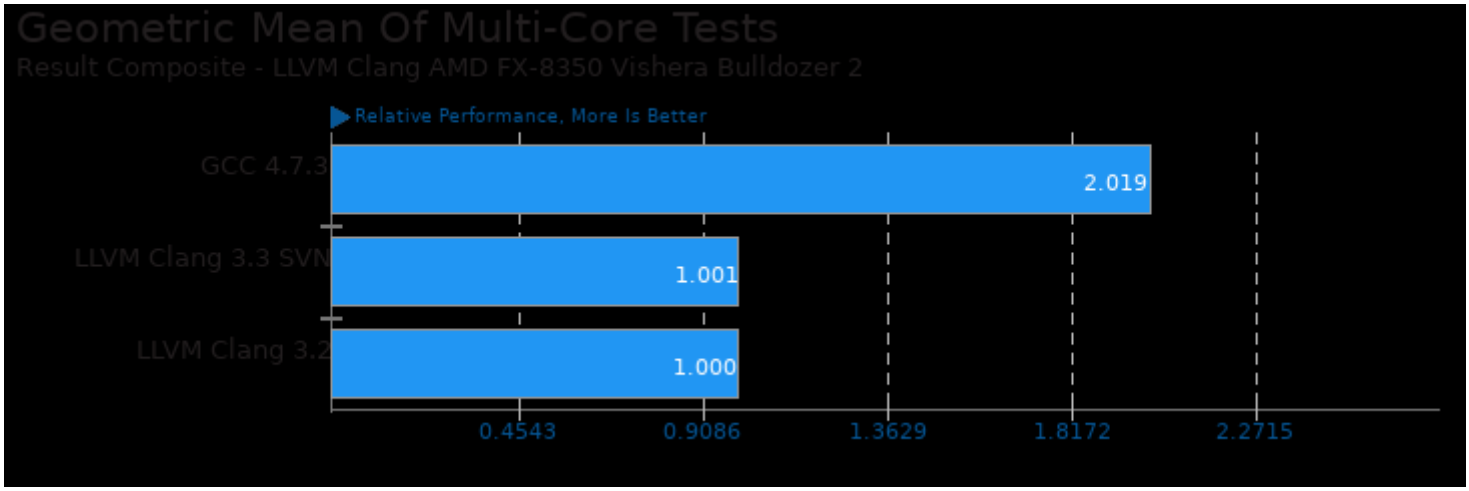


Geometric mean based upon tests: pts/blake2 and pts/john-the-ripper

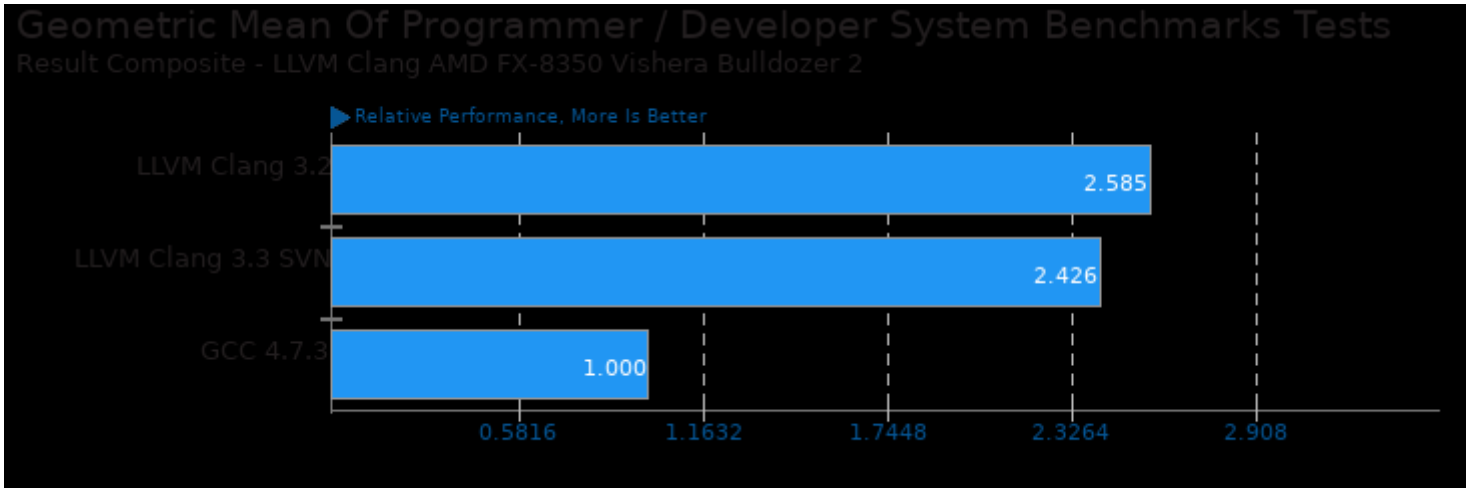
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Geometric mean based upon tests: pts/himeno, pts/hmmer and pts/mafft

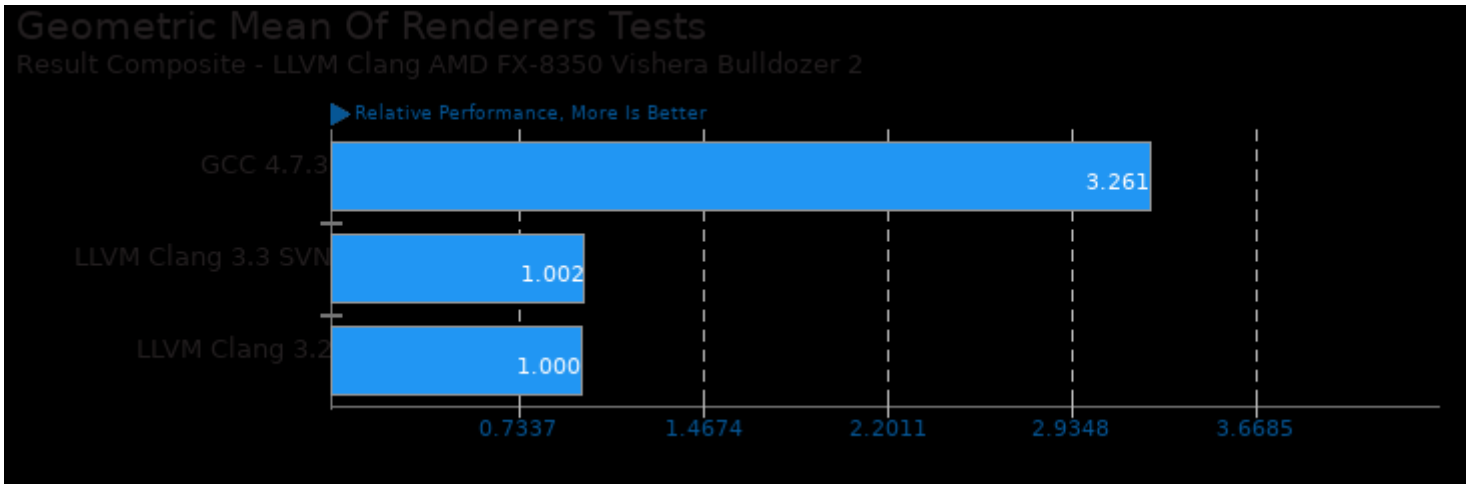


Geometric mean based upon tests: pts/c-ray, pts/john-the-ripper, pts/smallpt, pts/graphics-magick, pts/build-php and pts/build-imagemagick

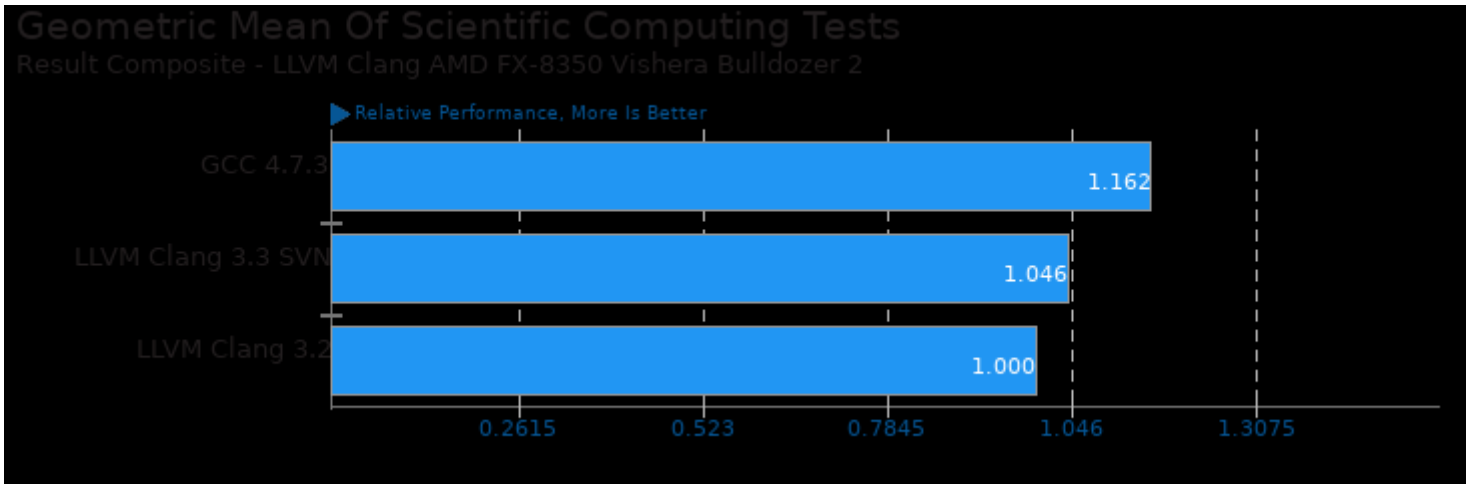


Geometric mean based upon tests: pts/build-php and pts/build-imagemagick

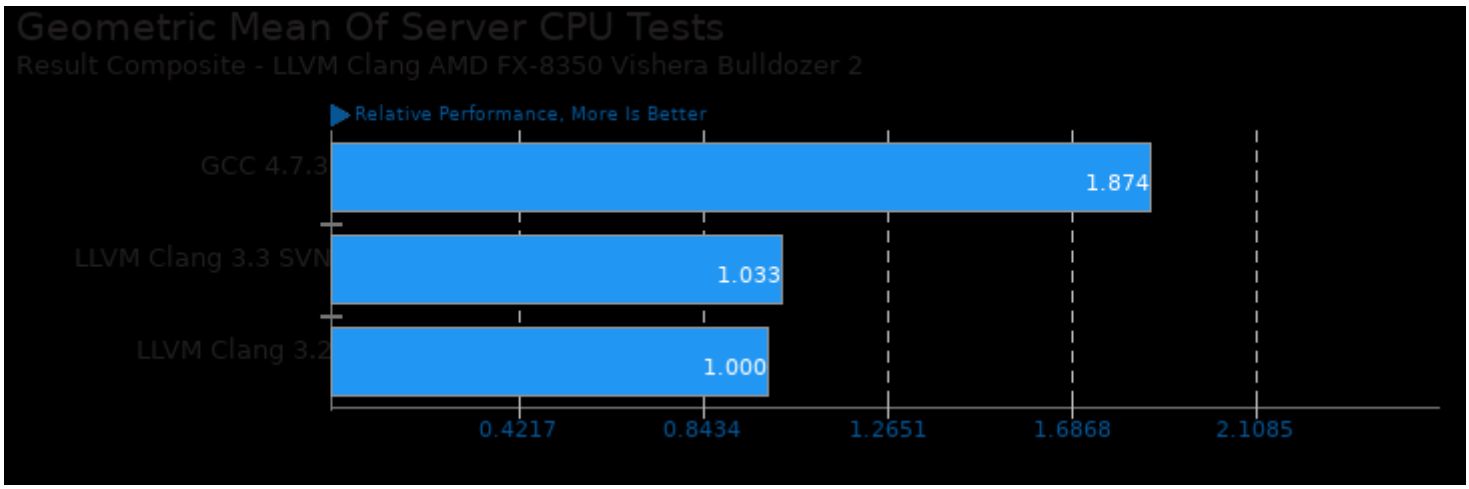
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Geometric mean based upon tests: pts/c-ray and pts/smallpt



Geometric mean based upon tests: pts/himeno, pts/hmmer and pts/mafft



Geometric mean based upon tests: pts/john-the-ripper, pts/himeno, pts/build-php and pts/c-ray

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