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Core i7 5775C vs. Core i7 4790K CPU Perf

Benchmarks by Michael Larabel for a future article on Phoronix.

Automated Executive Summary

Core i7 5775C had the most wins, coming in first place for 83% of the tests.

Based on the geometric mean of all complete results, the fastest (Core i7 5775C) was 1.132x the speed of the slowest (Core i7 4790K).

Test Systems:

Core i7 4790K

Processor: Intel Core i7-4790K @ 4.40GHz (8 Cores), Motherboard: Gigabyte Z97-HD3P, Chipset: Intel 4th Gen Core DRAM, Memory: 16384MB, Disk: 120GB Toshiba MKNSSDEC120GB, Graphics: Intel HD 4600 (1250MHz), Audio: Intel Xeon E3-1200 v3/4th, Monitor: DELL P2210H, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 15.10, Kernel: 4.2.0-999-generic (x86_64) 20150712, Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: intel 2.99.917, OpenGL: 3.3 Mesa 10.5.8, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --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-arch-directory=amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: intel_pstate powersave

Core i7 5775C

Processor: Intel Core i7-5775C @ 3.70GHz (8 Cores), Motherboard: MSI Z97-G45 GAMING (MS-7821) v1.0, Chipset: Intel Broadwell-U- DMI, Memory: 16384MB, Disk: 120GB Toshiba MKNSSDEC120GB, Graphics: Intel Broadwell-U (1150MHz), Audio: Intel Broadwell-U Audio, Monitor: DELL P2210H, Network: Qualcomm Atheros Killer E220x Gigabit

OS: Ubuntu 15.10, Kernel: 4.2.0-999-generic (x86_64) 20150712, Desktop: Unity 7.3.2, Display Server: X Server 1.17.1, Display Driver: intel 2.99.917, OpenGL: 3.3 Mesa 10.5.8, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --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-arch-directory=amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: intel_pstate powersave

	Core i7 4790K	Core i7 5775C
Himeno Benchmark - P.P.S (MFLOPS)	2092	2684
Normalized	77.96%	100%
Standard Deviation	12.4%	0.2%
HPC Challenge - G-HPL (GFLOPS)	48.31437	52.85397
Normalized	91.41%	100%
Standard Deviation	0.6%	0.4%
HPC Challenge - G-Ffte (GFLOPS)	4.13257	5.58695
Normalized	73.97%	100%
Standard Deviation	1.2%	0.6%
HPC Challenge - EP-DGEMM (GFLOPS)	6.45812	7.00536
Normalized	92.19%	100%
Standard Deviation	0.7%	0.4%
HPC Challenge - G-Ptrans (GB/s)	2.50122	2.87812
Normalized	86.9%	100%
Standard Deviation	0.4%	0.2%
x264 - H.2.V.E (FPS)	217.40	193.62
Normalized	100%	89.06%
Standard Deviation	1.7%	1.1%
OpenSSL - R.4.b.P (Signs/sec)	694.47	
Standard Deviation	2.9%	
HPC Challenge - G-HPL (GFLOPS/Watt)	0.44	0.54
Normalized	81.48%	100%
x264 - H.2.V.E (FPS/Watt)	3.84	4.04

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Normalized	95.05%	100%
Himeno Benchmark - P.P.S (MFLOPS/Watt)	**36.79**	**59.18**
Normalized	62.17%	100%
OpenSSL - R.4.b.P (Signs/sec/Watt)	6.93	

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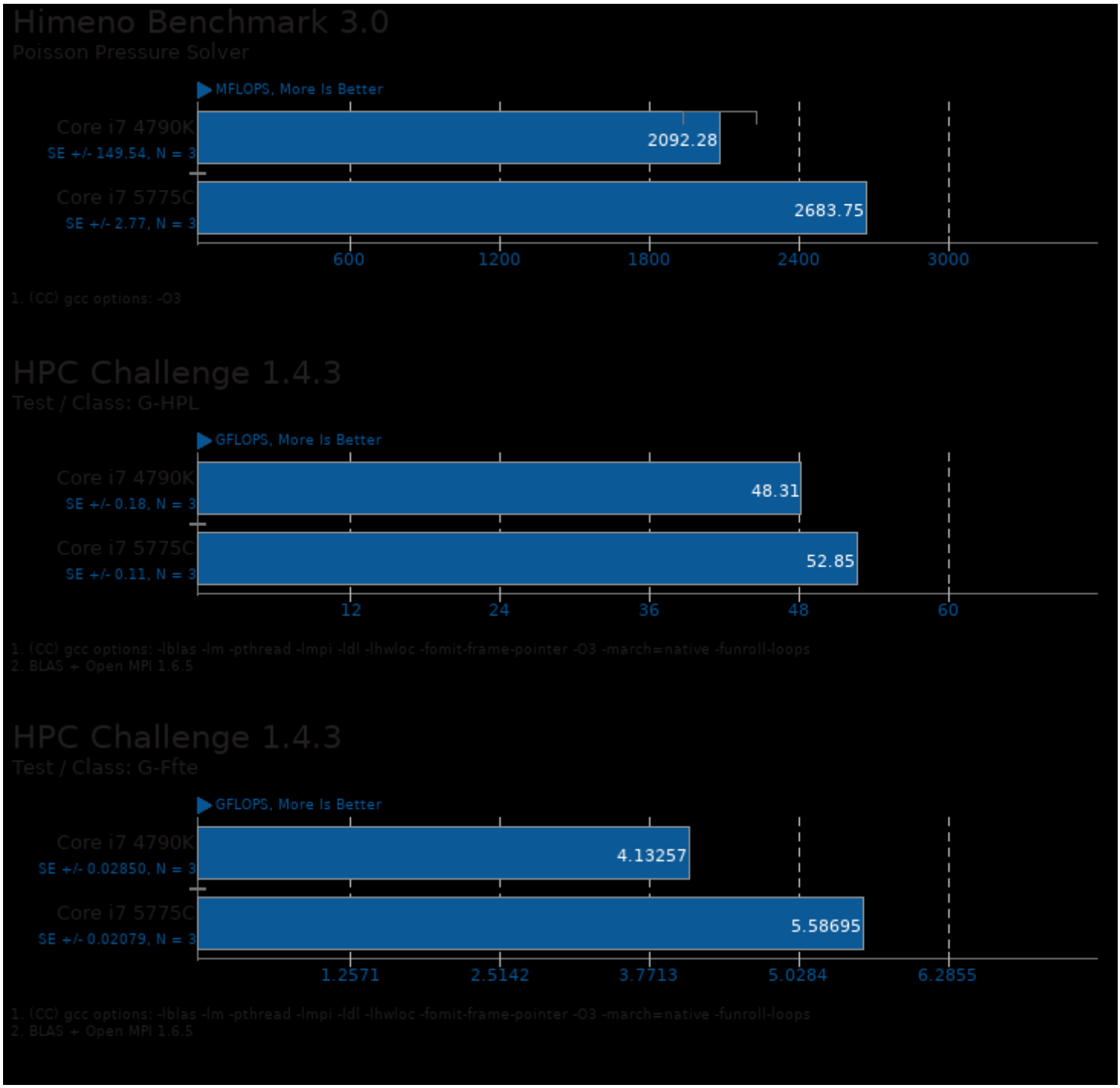

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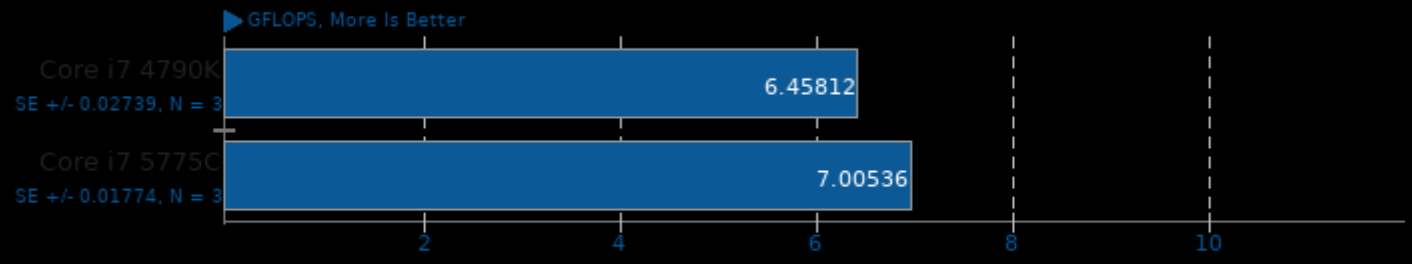
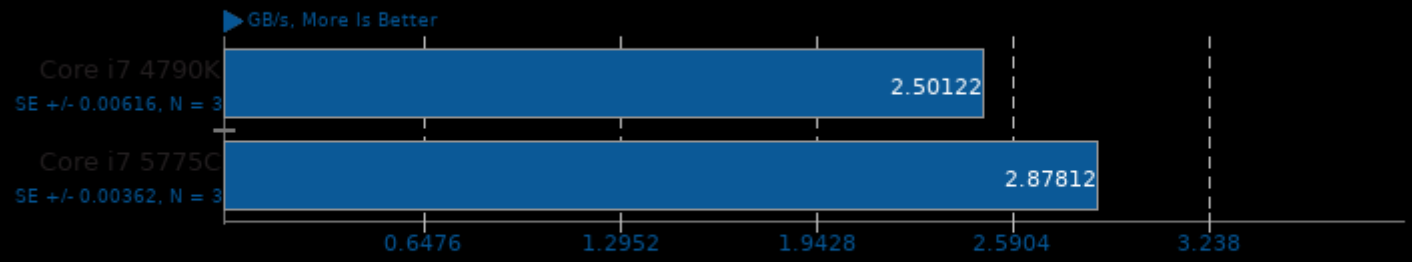
HPC Challenge 1.4.3
Test / Class: EP-DGEMM



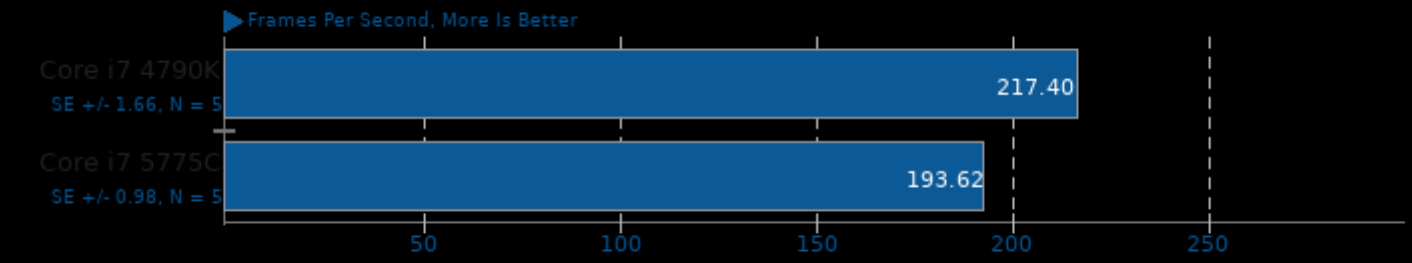
1. (CC) gcc options: -lblas -lm -pthread -lmpi -ldl -lhwloc -fomit-frame-pointer -O3 -march=native -funroll-loops
2. BLAS + Open MPI 1.6.5

HPC Challenge 1.4.3
Test / Class: G-Ptrans



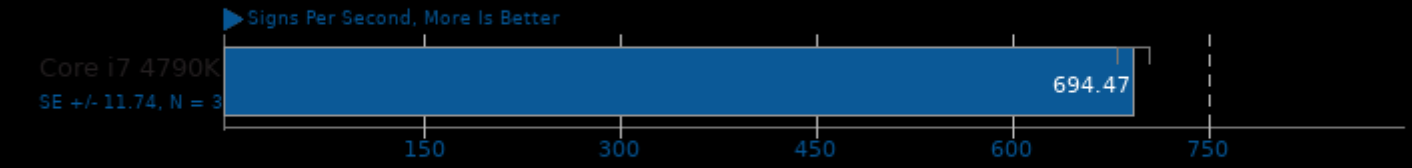
1. (CC) gcc options: -lblas -lm -pthread -lmpi -ldl -lhwloc -fomit-frame-pointer -O3 -march=native -funroll-loops
2. BLAS + Open MPI 1.6.5

x264 2014-08-30
H.264 Video Encoding



1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fomit-frame-pointer -fno-tree-vectorize

OpenSSL 1.0.1g
RSA 4096-bit Performance



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

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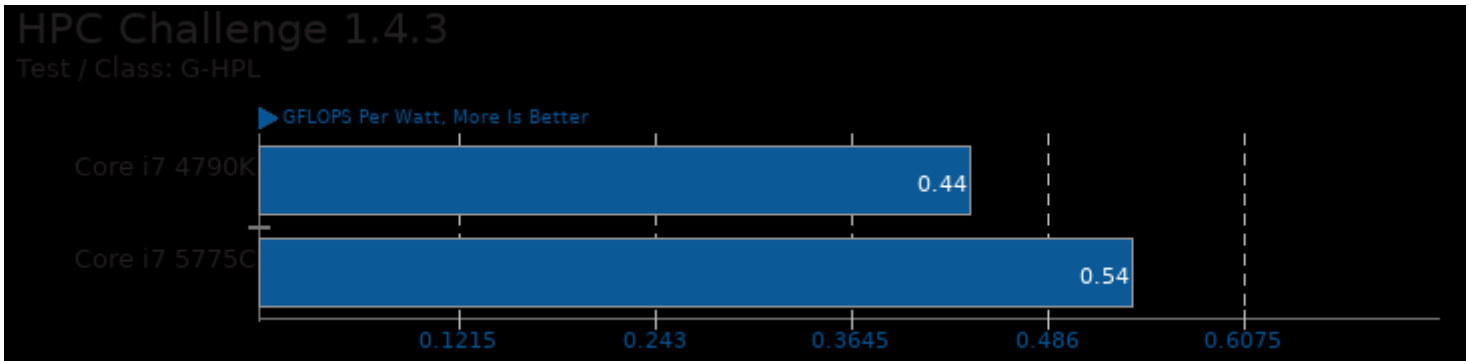

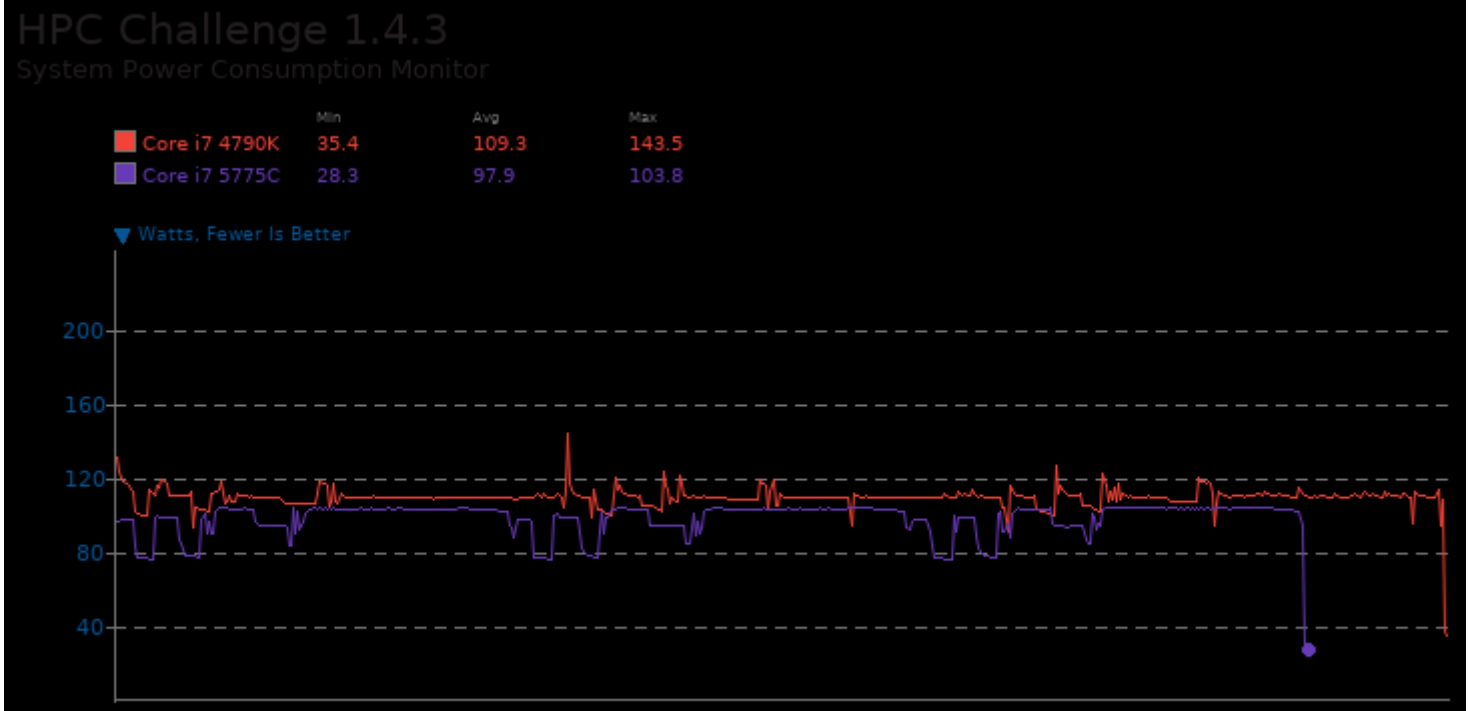

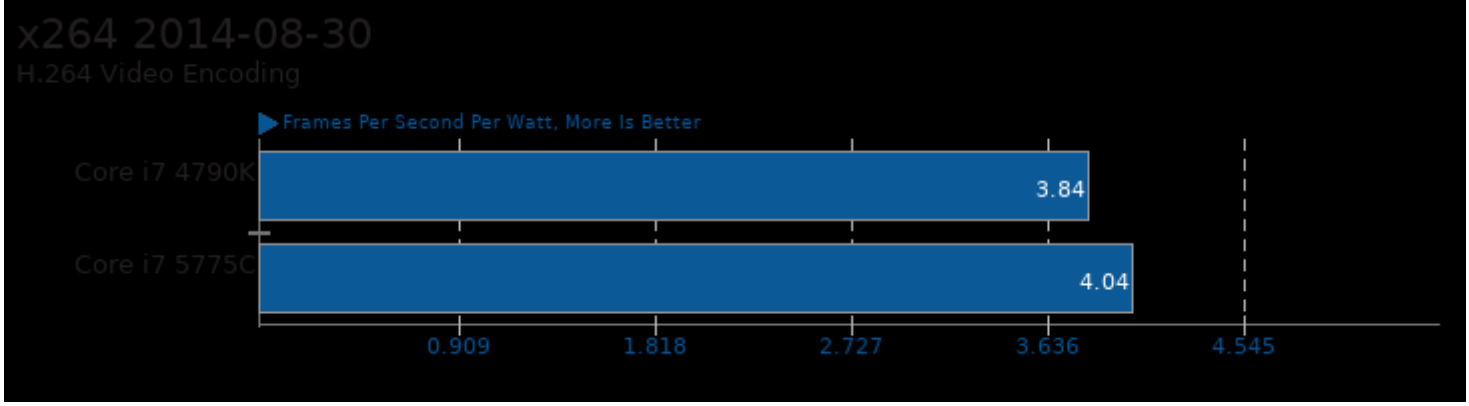

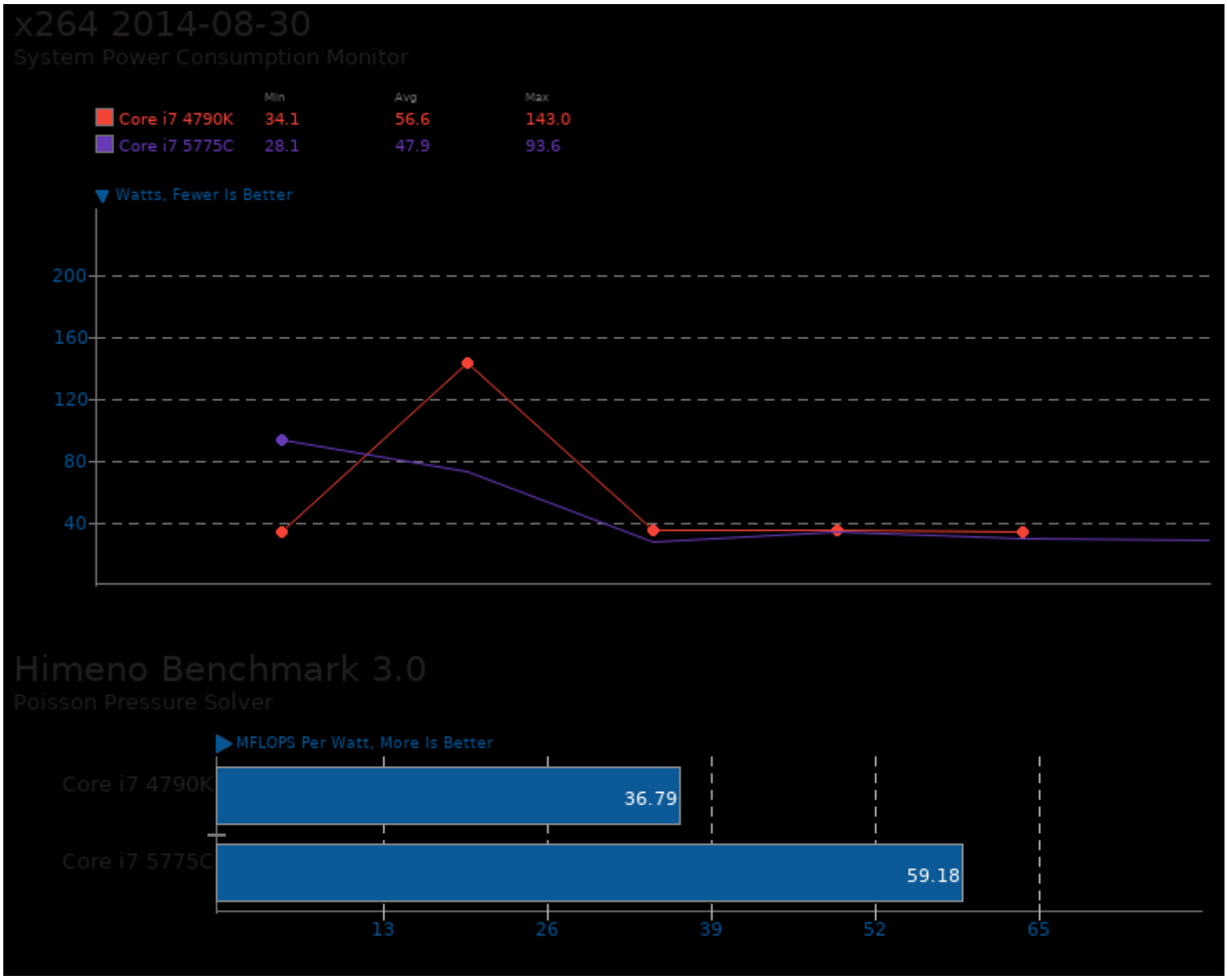
x264 2014-08-30
System Power Consumption Monitor
Min
Avg
Max
Core i7 4790K 34.1 56.6 143.0
Core i7 5775C 28.1 47.9 93.6
Watts, Fewer Is Better
200
160
120
80
40
Himeno Benchmark 3.0
Poisson Pressure Solver
MFLOPS Per Watt, More Is Better
Core i7 4790K
36.79
Core i7 5775C
59.18
13
26
39
52
65

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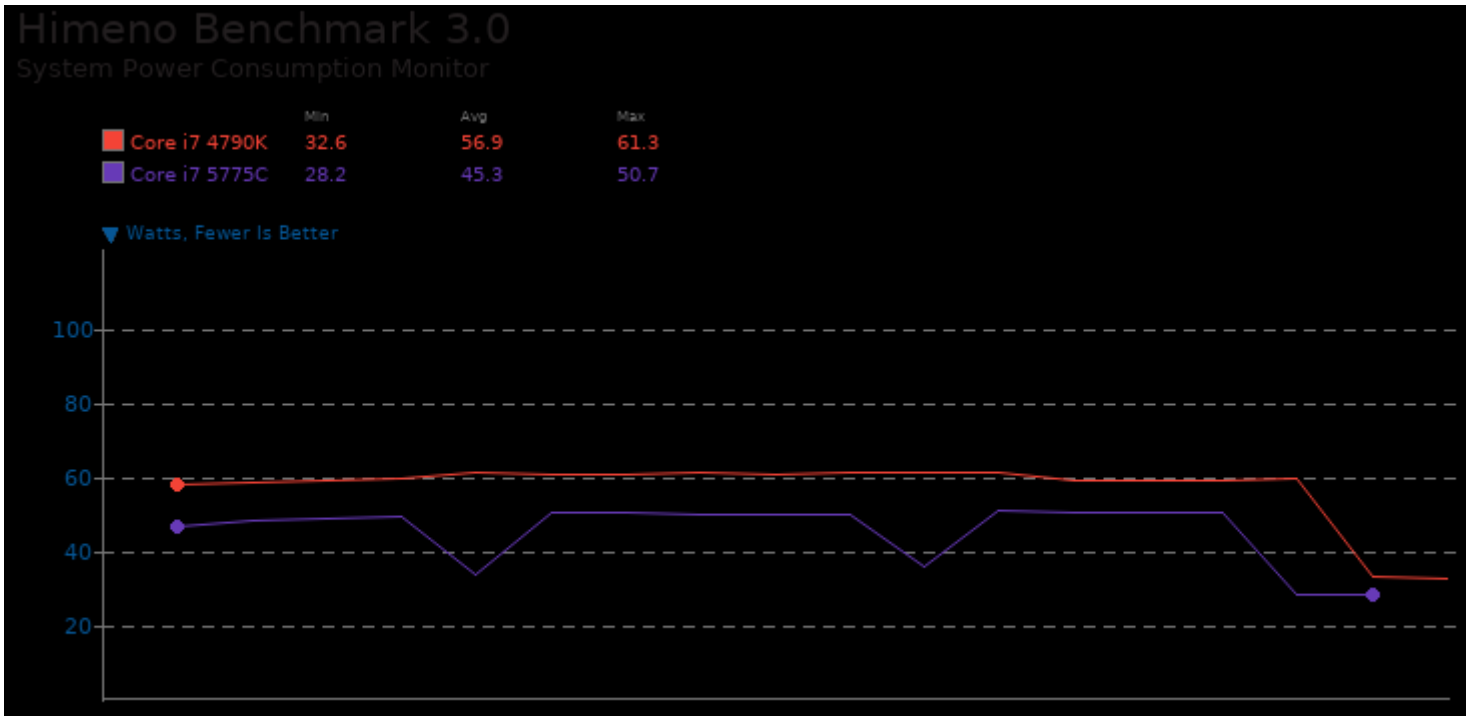

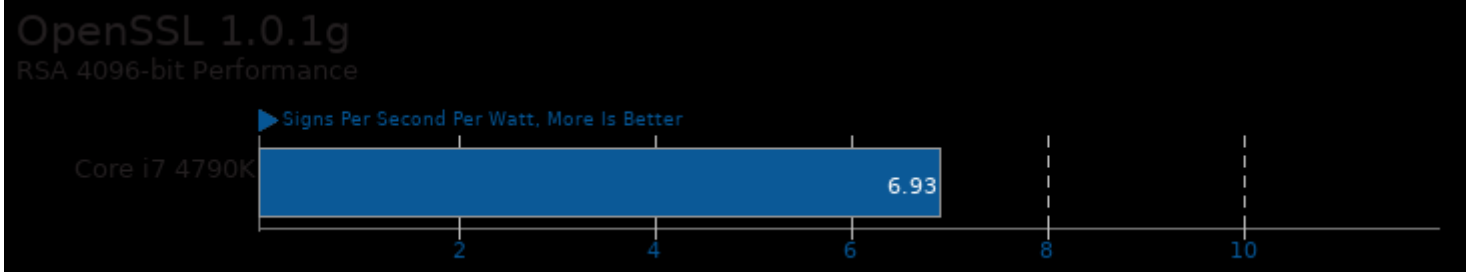

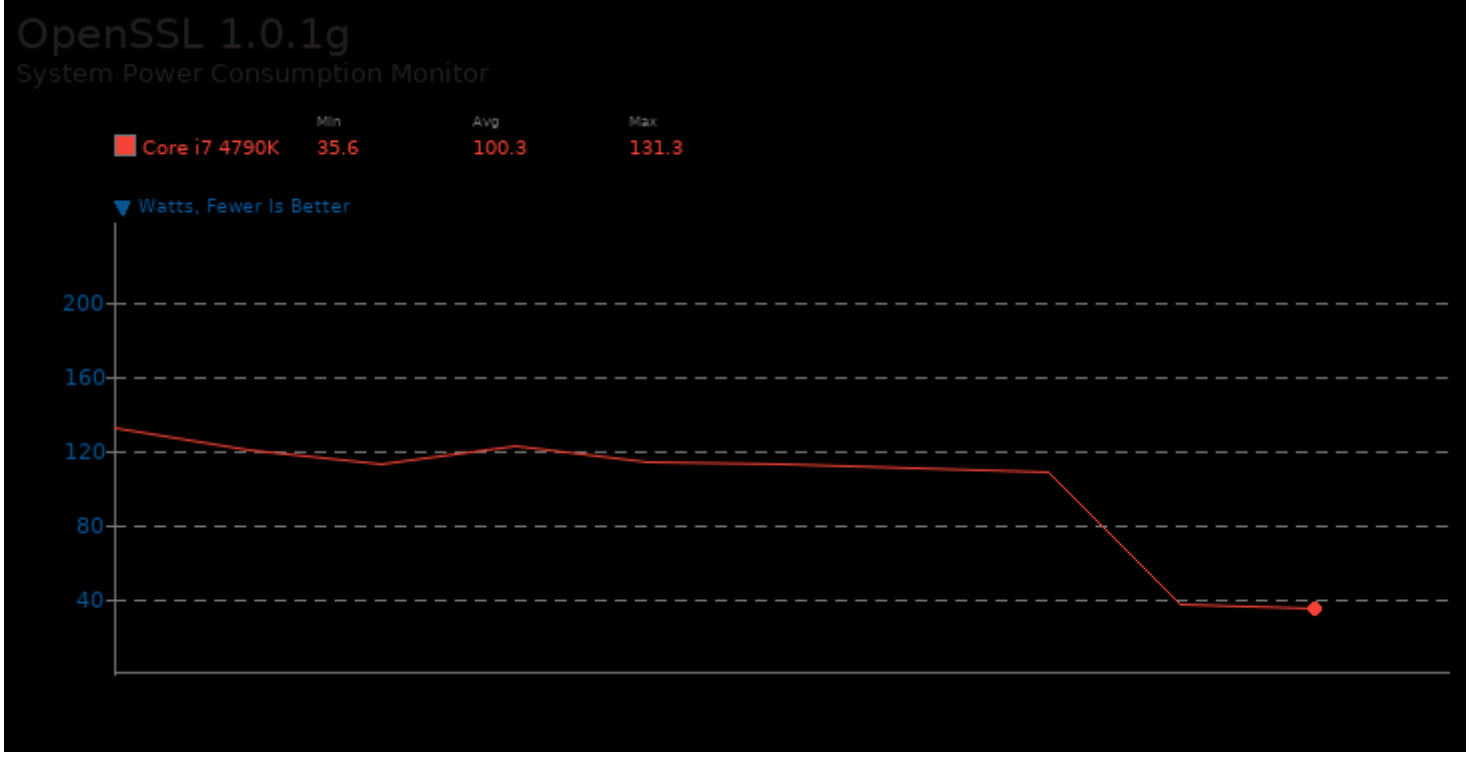

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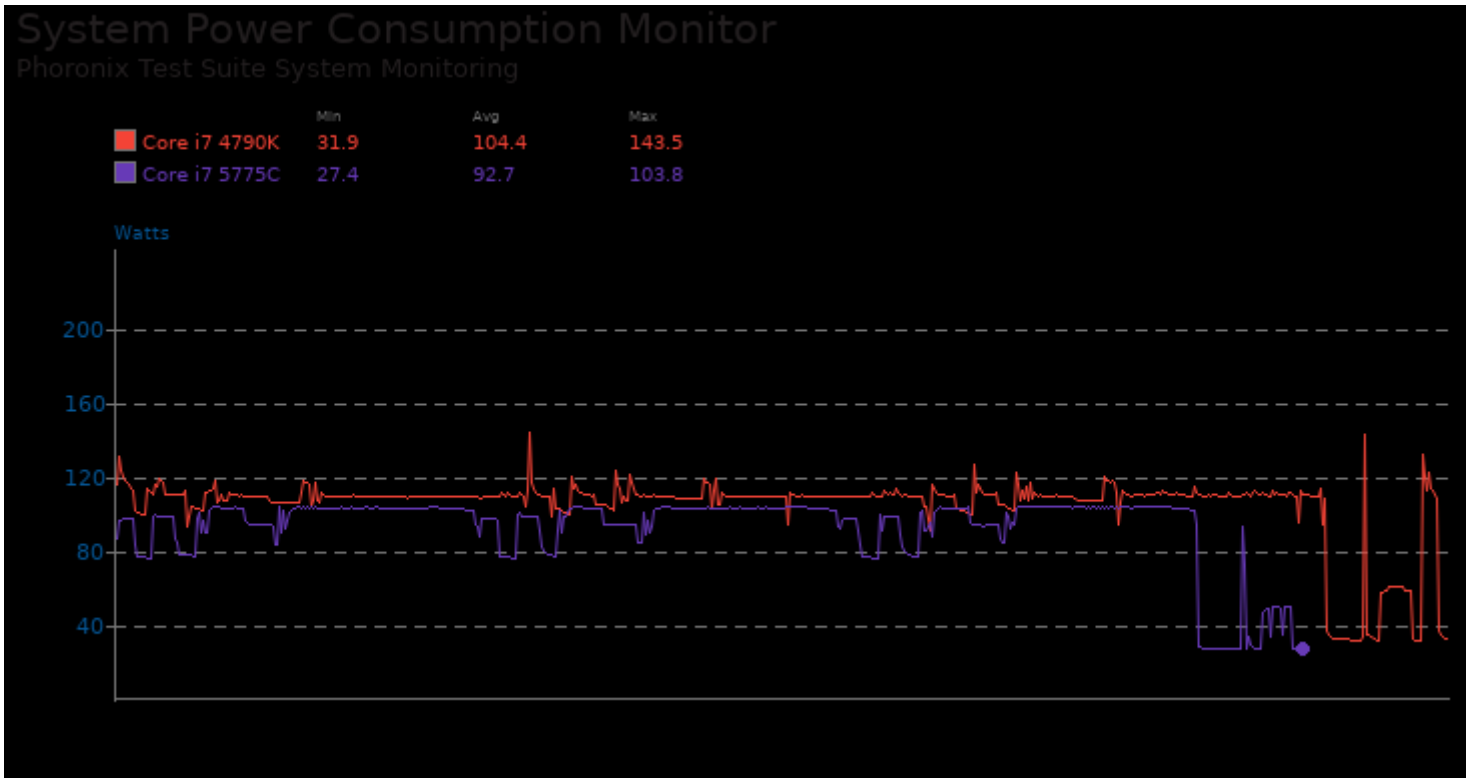

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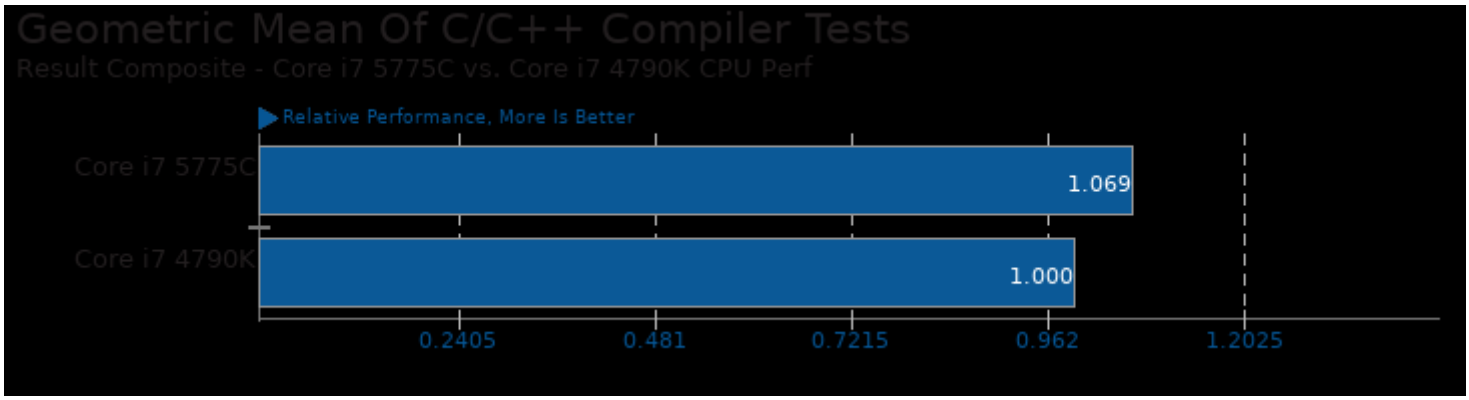
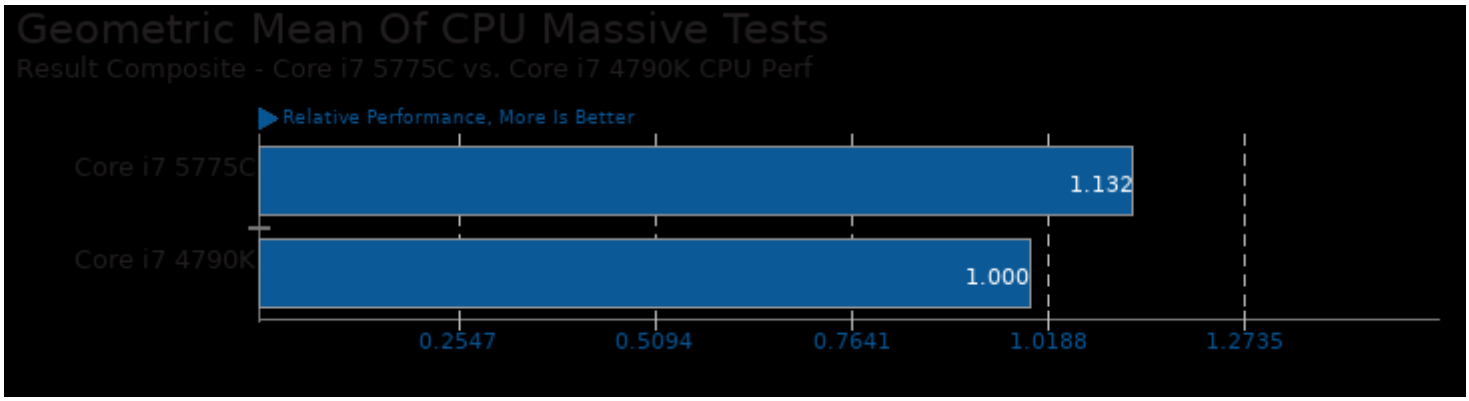
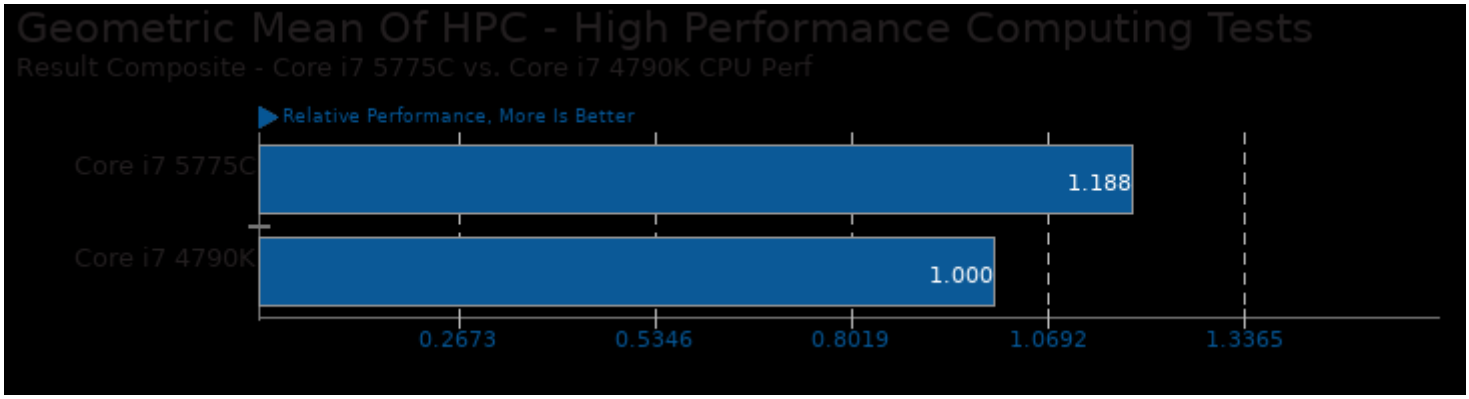
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/himeno, pts/x264 and pts/openssl



Geometric mean based upon tests: pts/x264, pts/himeno, pts/hpcc and pts/openssl



Geometric mean based upon tests: pts/hpcc and pts/himeno

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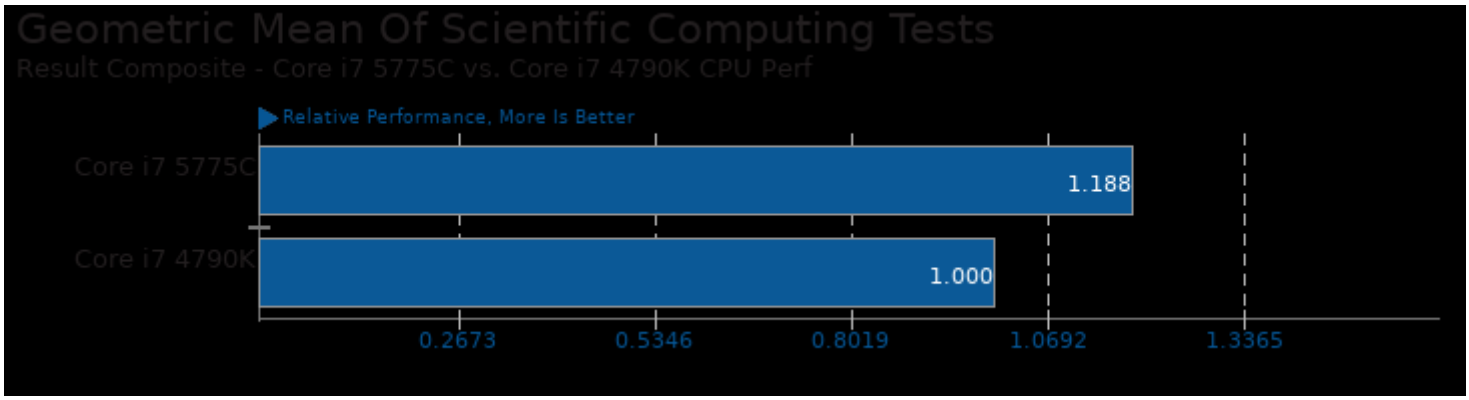
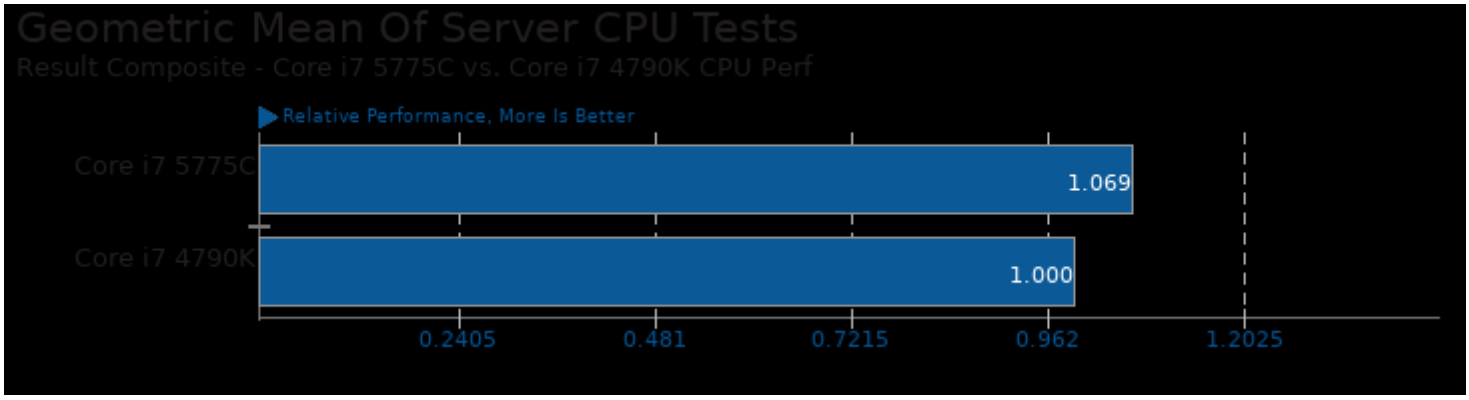


Geometric mean based upon tests: pts/hpcc and pts/himeno



Geometric mean based upon tests: pts/x264, pts/himeno and pts/openssl

This file was automatically generated via the Phoronix Test Suite benchmarking software on Wednesday, 9 October 2024 00:34.