



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp[®]_rate2006 = 127

ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECfp_rate_base2006 = 121

CPU2006 license: 13

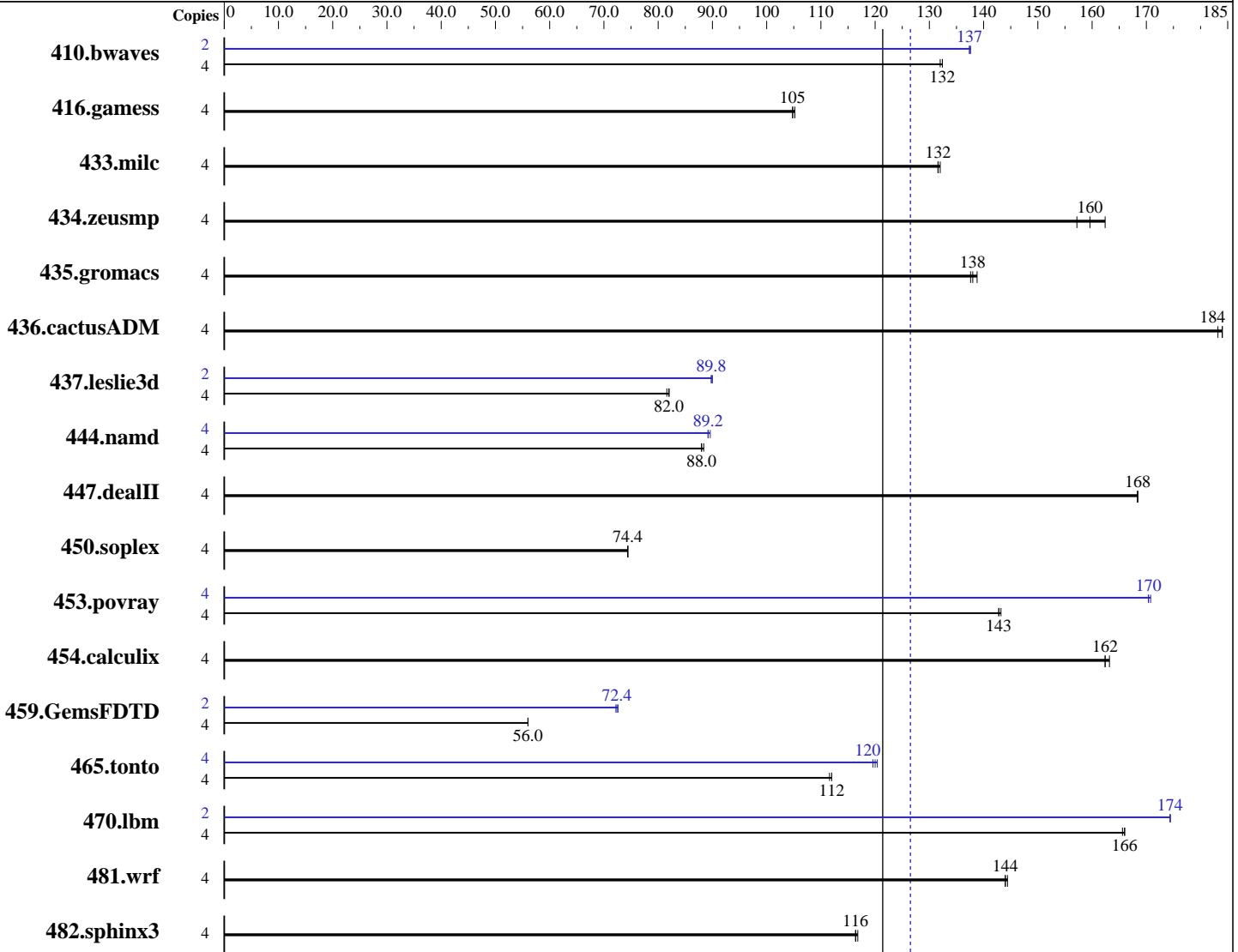
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Apr-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015



SPECfp_rate_base2006 = 121

SPECfp_rate2006 = 127

Hardware

CPU Name: Intel Core i3-6098P
 CPU Characteristics:
 CPU MHz: 3600
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

Software

Operating System: Microsoft Windows 7 Professional
 6.1.7601 Service Pack 1 Build 7601
 Compiler: C/C++: Version 16.0.0.110 of Intel C++ Studio XE for Windows;
 Fortran: Version 16.0.0.110 of Intel Fortran Studio XE for Windows;
 Libraries: Version 18.00.30723 of Microsoft Visual Studio 2013
 Auto Parallel: No

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp_rate2006 = 127

ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECfp_rate_base2006 = 121

CPU2006 license: 13

Test date: Apr-2016

Test sponsor: Intel Corporation

Hardware Availability: Dec-2015

Tested by: Intel Corporation

Software Availability: Aug-2015

L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx4 PC4-2133P-U)
Disk Subsystem: 1 TB Seagate Barracuda HDD, 7200 RPM
Other Hardware: None

File System: NTFS
System State: Default
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: SmartHeap Library Version 11.0 from <http://www.microquill.com/>

Results Table

Benchmark	Base						Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	411	132	411	132	411	132	2	198	137	198	138	198	137
416.gamess	4	746	105	746	105	746	105	4	746	105	746	105	746	105
433.milc	4	279	132	279	132	279	132	4	279	132	279	132	279	132
434.zeusmp	4	224	162	232	157	228	160	4	224	162	232	157	228	160
435.gromacs	4	206	139	207	138	207	138	4	206	139	207	138	207	138
436.cactusADM	4	260	184	261	183	260	184	4	260	184	261	183	260	184
437.leslie3d	4	459	82.0	458	82.0	460	81.6	2	209	89.8	209	90.0	209	89.8
444.namd	4	365	88.0	364	88.0	363	88.4	4	360	89.2	359	89.2	358	89.6
447.dealII	4	272	168	272	168	272	168	4	272	168	272	168	272	168
450.soplex	4	448	74.4	449	74.4	449	74.4	4	448	74.4	449	74.4	449	74.4
453.povray	4	149	143	149	143	149	143	4	125	170	125	171	125	170
454.calculix	4	202	163	203	162	203	162	4	202	163	203	162	203	162
459.GemsFDTD	4	757	56.0	757	56.0	758	56.0	2	292	72.6	294	72.2	293	72.4
465.tonto	4	351	112	353	112	351	112	4	329	120	327	120	328	120
470.lbm	4	332	166	331	166	331	166	2	158	174	158	174	158	174
481.wrf	4	311	144	309	144	310	144	4	311	144	309	144	310	144
482.sphinx3	4	669	116	669	117	670	116	4	669	116	669	117	670	116

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Invocation Notes

To compile these binaries, the Intel Compiler 16.0 was set up to generate 64-bit binaries with the command:
"psxevars.bat intel64" (shortcut provided in the Intel(r) Parallel Studio XE 2016 program folder)

Submit Notes

Processes were bound to specific processors using the start command with the /affinity switch. The config file option 'submit' was used to generate the affinity mask for each process.



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp_rate2006 = 127

ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECfp_rate_base2006 = 121

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Apr-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015

Platform Notes

Sysinfo program C:\SPEC16.0/Docs/sysinfo
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c
running on CltF832E4885A95 Wed Apr 6 05:33:42 2016

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

Trying 'systeminfo'

OS Name : Microsoft Windows 7 Professional
OS Version : 6.1.7601 Service Pack 1 Build 7601
System Manufacturer: System manufacturer
System Model : System Product Name
Processor(s) : 1 Processor(s) Installed.
 [01]: Intel64 Family 6 Model 94 Stepping 3 GenuineIntel ~3600 Mhz
BIOS Version : American Megatrends Inc. 0704, 1/12/2016
Total Physical Memory: 8,074 MB

Trying 'wmic cpu get /value'

DeviceID : CPU0
L2CacheSize : 512
L3CacheSize : 3072
MaxClockSpeed : 3600
Name : Intel(R) Core(TM) i3-6098P CPU @ 3.60GHz
NumberOfCores : 2
NumberOfLogicalProcessors: 4

(End of data from sysinfo program)

Component Notes

Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply

General Notes

450.soplex (base): "getline_test" src.alt was used.
447.dealII (base): "max_prototype" src.alt was used.
447.dealII (base): "cxx11_make_pair" src.alt was used.
450.soplex (base): "getline_test" src.alt was used.
447.dealII (base): "max_prototype" src.alt was used.
447.dealII (base): "cxx11_make_pair" src.alt was used.

Binaries compiled on a system with 1x Intel Xeon E5-2699 v3 CPU
+ 64GB memory using Windows 8.1 Enterprise 64-bit



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp_rate2006 = 127

ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECfp_rate_base2006 = 121

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Apr-2016
Hardware Availability: Dec-2015
Software Availability: Aug-2015

Base Compiler Invocation

C benchmarks:
icl -Qvc12 -Qstd=c99

C++ benchmarks:
icl -Qvc12

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc12 -Qstd=c99 ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_P64
416.gamess: -DSPEC_CPU_P64
433.milc: -DSPEC_CPU_P64
434.zeusmp: -DSPEC_CPU_P64
435.gromacs: -DSPEC_CPU_P64
436.cactusADM: -DSPEC_CPU_P64 /names:lowercase /assume:underscore
437.leslie3d: -DSPEC_CPU_P64
444.namd: -DSPEC_CPU_P64 /TP
447.dealII: -DSPEC_CPU_P64 -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
-DSPEC_CPU_BOOST_CONFIG_MSC_VER -DSPEC_NEED_ALGORITHM
450.soplex: -DSPEC_CPU_P64 -DSPEC_GETLINE_TEST
453.povray: -DSPEC_CPU_P64
454.calculix: -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER /names:lowercase
459.GemsFDTD: -DSPEC_CPU_P64
465.tonto: -DSPEC_CPU_P64
470.lbm: -DSPEC_CPU_P64
481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
482.sphinx3: -DSPEC_CPU_P64

Base Optimization Flags

C benchmarks:
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000 shlw64M.lib -link /FORCE:MULTIPLE

C++ benchmarks:
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qcxx-features -Qauto-ilp32 /F1000000000 shlw64M.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
/F1000000000 shlw64M.lib -link /FORCE:MULTIPLE

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp_rate2006 = 127

ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECfp_rate_base2006 = 121

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Apr-2016
Hardware Availability: Dec-2015
Software Availability: Aug-2015

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch  
-Qauto-ilp32 /F1000000000 shlw64M.lib -link /FORCE:MULTIPLE
```

Peak Compiler Invocation

C benchmarks:

```
icl -Qvc12 -Qstd=c99
```

C++ benchmarks:

```
icl -Qvc12
```

Fortran benchmarks:

```
ifort
```

Benchmarks using both Fortran and C:

```
icl -Qvc12 -Qstd=c99 ifort
```

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
433.milc: basepeak = yes
```

```
470.lbm: -QxCORE-AVX2 -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qansi-alias -Qopt-prefetch -Qauto-ilp32  
/F1000000000 shlw64M.lib -link /FORCE:MULTIPLE
```

```
482.sphinx3: basepeak = yes
```

C++ benchmarks:

```
444.namd: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)  
-Qipo -O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000  
shlw64M.lib -link /FORCE:MULTIPLE
```

```
447.dealIII: basepeak = yes
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp_rate2006 = 127

ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECfp_rate_base2006 = 121

CPU2006 license: 13

Test date: Apr-2016

Test sponsor: Intel Corporation

Hardware Availability: Dec-2015

Tested by: Intel Corporation

Software Availability: Aug-2015

Peak Optimization Flags (Continued)

450.soplex: basepeak = yes

453.povray: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32
/F1000000000 sh1W64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: -QxCORE-AVX2 -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo
-O3 -Qprec-div- -Qansi-alias -Qopt-prefetch /F1000000000
sh1W64M.lib -link /FORCE:MULTIPLE

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

465.tonto: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000
sh1W64M.lib -link /FORCE:MULTIPLE

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-windows.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-windows.xml>



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp_rate2006 = 127

ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECfp_rate_base2006 = 121

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Apr-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Jul 12 11:02:24 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 July 2016.