# SPEC® CFP2006 Result



## ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

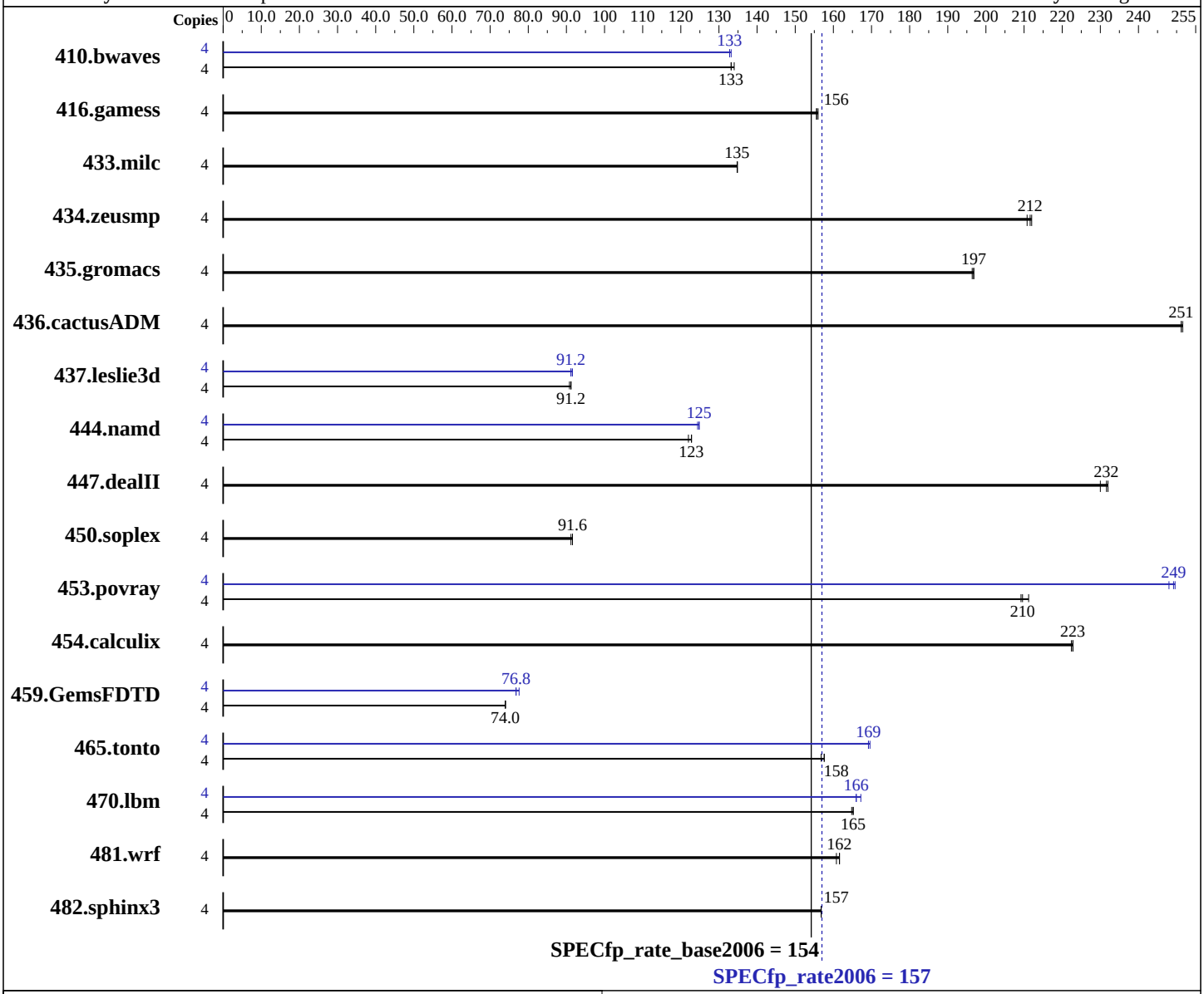
ASUS Q170M-C motherboard (Intel Core i5-6600T)

SPECfp®_rate2006 = 157

SPECfp_rate_base2006 = 154

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

**Test date:** May-2016
**Hardware Availability:** Sep-2015
**Software Availability:** Aug-2015




## Hardware

| | |
|---|---|
| CPU Name: | Intel Core i5-6600T |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 GHz |
| CPU MHz: | 2700 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip |
| 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 |

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## 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 |

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L3 Cache: 6 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 | 406 | 134 | **408** | **133** | 408 | 133 | 4 | **409** | **133** | 409 | 133 | 409 | 133 |
| 416.gamess | 4 | **503** | **156** | 503 | 156 | 502 | 156 | 4 | **503** | **156** | 503 | 156 | 502 | 156 |
| 433.milc | 4 | 273 | 135 | 273 | 135 | **273** | **135** | 4 | 273 | 135 | 273 | 135 | **273** | **135** |
| 434.zeusmp | 4 | **172** | **212** | 172 | 212 | 173 | 211 | 4 | **172** | **212** | 172 | 212 | 173 | 211 |
| 435.gromacs | 4 | 146 | 196 | 145 | 197 | **145** | **197** | 4 | 146 | 196 | 145 | 197 | **145** | **197** |
| 436.cactusADM | 4 | **190** | **251** | 190 | 251 | 190 | 252 | 4 | **190** | **251** | 190 | 251 | 190 | 252 |
| 437.leslie3d | 4 | 414 | 90.8 | **413** | **91.2** | 412 | 91.2 | 4 | 412 | 91.2 | **411** | **91.2** | 411 | 91.6 |
| 444.namd | 4 | 263 | 122 | **262** | **123** | 261 | 123 | 4 | 258 | 124 | 257 | 125 | **257** | **125** |
| 447.dealII | 4 | **198** | **232** | 199 | 230 | 197 | 232 | 4 | **198** | **232** | 199 | 230 | 197 | 232 |
| 450.soplex | 4 | 365 | 91.2 | **364** | **91.6** | 364 | 91.6 | 4 | 365 | 91.2 | **364** | **91.6** | 364 | 91.6 |
| 453.povray | 4 | 102 | 209 | **102** | **210** | 101 | 211 | 4 | 85.2 | 250 | **85.4** | **249** | 85.8 | 248 |
| 454.calculix | 4 | 148 | 222 | 148 | 223 | **148** | **223** | 4 | 148 | 222 | 148 | 223 | **148** | **223** |
| 459.GemsFDTD | 4 | 574 | 74.0 | 575 | 74.0 | **574** | **74.0** | 4 | 547 | 77.6 | **553** | **76.8** | 553 | 76.8 |
| 465.tonto | 4 | **250** | **158** | 250 | 158 | 251 | 157 | 4 | 232 | 170 | **232** | **169** | 233 | 169 |
| 470.lbm | 4 | 333 | 165 | **333** | **165** | 333 | 165 | 4 | 329 | 167 | **331** | **166** | 331 | 166 |
| 481.wrf | 4 | 278 | 161 | 277 | 162 | **277** | **162** | 4 | 278 | 161 | 277 | 162 | **277** | **162** |
| 482.sphinx3 | 4 | 498 | 157 | 497 | 157 | **497** | **157** | 4 | 498 | 157 | 497 | 157 | **497** | **157** |

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)
```

## Platform Notes

```
Sysinfo program C:\SPEC16.0/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on CltF832E48856E2 Wed May  4 05:03:52 2016

This section contains SUT (System Under Test) info as seen by
some common utilities.  To remove or add to this section, see:
```

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## Platform Notes (Continued)

```
      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 ~2701 Mhz
    BIOS Version  : American Megatrends Inc. 0704, 1/12/2016
    Total Physical Memory: 8,069 MB

    Trying 'wmic cpu get /value'
    DeviceID      : CPU0
    L2CacheSize   : 1024
    L3CacheSize   : 6144
    MaxClockSpeed : 2701
    Name          : Intel(R) Core(TM) i5-6600T CPU @ 2.70GHz
    NumberOfCores : 4
    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
```

# Base Compiler Invocation

C benchmarks:

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

Continued on next page

## Base Compiler Invocation (Continued)

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

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## 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.dealII: basepeak = yes

450.soplex: basepeak = yes

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## Peak Optimization Flags (Continued)

453.povray: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000 shlW64M.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 shlW64M.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 shlW64M.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



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

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