## SPEC® CFP2006 Result

**ASUSTeK Computer Inc.**  
(Test Sponsor: Intel Corporation)  
ASUS Q170M-C motherboard (Intel Core i5-6600K)  

### SPECfp®2006 = 90.5  
SPECfp_base2006 = 88.5

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECfp2006</th>
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<td>410.bwaves</td>
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<td>435.gromacs</td>
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<td>436.cactusADM</td>
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<td>482.sphinx3</td>
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</table>

### Hardware

- **CPU Name:** Intel Core i5-6600K  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.90 GHz  
- **CPU MHz:** 3500  
- **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

### 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:** Yes

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Continued on next page
## Results Table

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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: 

```
pvxevars.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 CltF832E4885A95 Tue Mar  8 17:14:12 2016
```

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

Continued on next page
ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

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

SPECfp2006 = 90.5
SPECfp_base2006 = 88.5

CPU2006 license: 13
Test date: Mar-2016
Test sponsor: Intel Corporation
Hardware Availability: Aug-2015
Tested by: Intel Corporation
Software Availability: Aug-2015

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 ~3501 Mhz
BIOS Version : American Megatrends Inc. 0704, 1/12/2016
Total Physical Memory: 8,070 MB

Trying 'wmic cpu get /value'
DeviceID : CPU0
L2CacheSize : 1024
L3CacheSize : 6144
MaxClockSpeed : 3501
Name : Intel(R) Core(TM) i5-6600K CPU @ 3.50GHz
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.

OMP_NUM_THREADS set to number of processors cores
KMP_AFFINITY set to granularity=fine,scatter
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

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(Test Sponsor: Intel Corporation)

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

SPECfp2006 = 90.5
SPECfp_base2006 = 88.5

CPU2006 license: 13
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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  
-DSPEC_CPU_WINDOWS_ICL
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
468.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 -Qparallel -Qansi-alias  
-Qopt-prefetch /F1000000000

C++ benchmarks:  
-QxCORE-AVX2 -Qipo -O3 -Qprec-div -Qparallel -Qansi-alias  
-Qopt-prefetch -Qcxx-features /F1000000000 shlW64M.lib  
-link /FORCE:MULTIPLE

Fortran benchmarks:  
-QxCORE-AVX2 -Qipo -O3 -Qprec-div -Qparallel -Qansi-alias  
-Qopt-prefetch /F1000000000

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Test date: Mar-2016  
Hardware Availability: Aug-2015  
Software Availability: Aug-2015  

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
- QxCORE-AVX2  
- qipo  
- Qprec-div  
- Qparallel  
- Qansi-alias  
- Qopt-prefetch  
/ F1000000000

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: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)  
-Qipo -Qprec-div -Oa / F1000000000 shlW64M.lib  
-link /FORCE:MULTIPLE

447.dealII: basepeak = yes
450.soplex: basepeak = yes

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**Test date:** Mar-2016  
**Test sponsor:** Intel Corporation  
**Hardware Availability:** Aug-2015  
**Tested by:** Intel Corporation  
**Software Availability:** Aug-2015

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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 –Qunroll14 –Qansi-alias /F1000000000`  
- `shlw64m.lib`  
- `-link /FORCE:MULTIPLE`

Fortran benchmarks:

410.bwaves:  
- `basepeak = yes`

416.gameess:  
- `–QxCORE-AVX2(pass 2)`  
- `–Qprof_gen(pass 1)`  
- `–Qprof_use(pass 2)`  
- `–Qipo –O3 –Qprec-div –Qunroll12 –Ob0 –Qansi-alias`  
- `–Qscalar-rep –/F1000000000`

434.zeusmp:  
- `basepeak = yes`

437.leslie3d:  
- `basepeak = yes`

459.GemsFDTD:  
- `basepeak = yes`

465.tonto:  
- `–QxCORE-AVX2(pass 2)`  
- `–Qprof_gen(pass 1)`  
- `–Qprof_use(pass 2)`  
- `/F1000000000`

Benchmarks using both Fortran and C:

435.gromacs:  
- `basepeak = yes`

436.cactusADM:  
- `basepeak = yes`

454.calculix:  
- `basepeak = yes`

481.wrf:  
- `basepeak = yes`

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


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

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

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