ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

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

SPECfp®2006 = 84.4  
SPECfp_base2006 = 82.7

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

---

**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

---

**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

---

**Continued on next page**
SPEC CFP2006 Result

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

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

SPECfp2006 = 84.4
SPECfp_base2006 = 82.7

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

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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>102</td>
<td>134</td>
<td>101</td>
<td>134</td>
<td>102</td>
<td>133</td>
<td>102</td>
<td>134</td>
<td>102</td>
<td>133</td>
</tr>
<tr>
<td>416.gamess</td>
<td>453</td>
<td>43.2</td>
<td>453</td>
<td>43.2</td>
<td>453</td>
<td>43.2</td>
<td>419</td>
<td>46.7</td>
<td>418</td>
<td>46.8</td>
</tr>
<tr>
<td>433.milc</td>
<td>109</td>
<td>84.4</td>
<td>109</td>
<td>84.2</td>
<td>109</td>
<td>84.1</td>
<td>109</td>
<td>84.4</td>
<td>109</td>
<td>84.2</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>50.5</td>
<td>180</td>
<td>50.7</td>
<td>180</td>
<td>50.5</td>
<td>180</td>
<td>50.5</td>
<td>180</td>
<td>50.5</td>
<td>180</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>115</td>
<td>62.4</td>
<td>115</td>
<td>62.4</td>
<td>115</td>
<td>61.9</td>
<td>115</td>
<td>62.4</td>
<td>115</td>
<td>61.9</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>38.4</td>
<td>311</td>
<td>38.3</td>
<td>312</td>
<td>38.4</td>
<td>311</td>
<td>38.4</td>
<td>311</td>
<td>38.3</td>
<td>312</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>104</td>
<td>90.7</td>
<td>104</td>
<td>90.7</td>
<td>104</td>
<td>90.7</td>
<td>104</td>
<td>90.7</td>
<td>104</td>
<td>90.7</td>
</tr>
<tr>
<td>444.namd</td>
<td>240</td>
<td>33.4</td>
<td>240</td>
<td>33.4</td>
<td>240</td>
<td>33.4</td>
<td>236</td>
<td>34.0</td>
<td>236</td>
<td>34.0</td>
</tr>
<tr>
<td>447.dealII</td>
<td>168</td>
<td>68.2</td>
<td>168</td>
<td>68.1</td>
<td>168</td>
<td>68.0</td>
<td>168</td>
<td>68.2</td>
<td>168</td>
<td>68.1</td>
</tr>
<tr>
<td>450.soplex</td>
<td>182</td>
<td>45.9</td>
<td>182</td>
<td>45.8</td>
<td>182</td>
<td>45.8</td>
<td>182</td>
<td>45.9</td>
<td>182</td>
<td>45.8</td>
</tr>
<tr>
<td>453.povray</td>
<td>85.2</td>
<td>62.4</td>
<td>85.0</td>
<td>62.6</td>
<td>85.3</td>
<td>62.4</td>
<td>72.2</td>
<td>73.7</td>
<td>71.8</td>
<td>74.1</td>
</tr>
<tr>
<td>454.calculix</td>
<td>122</td>
<td>67.8</td>
<td>122</td>
<td>67.8</td>
<td>122</td>
<td>67.8</td>
<td>122</td>
<td>67.8</td>
<td>122</td>
<td>67.8</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>149</td>
<td>71.3</td>
<td>149</td>
<td>71.3</td>
<td>149</td>
<td>71.4</td>
<td>149</td>
<td>71.3</td>
<td>149</td>
<td>71.4</td>
</tr>
<tr>
<td>465.tonto</td>
<td>197</td>
<td>49.9</td>
<td>187</td>
<td>52.8</td>
<td>186</td>
<td>52.8</td>
<td>172</td>
<td>57.1</td>
<td>172</td>
<td>57.1</td>
</tr>
<tr>
<td>470.lbm</td>
<td>85.3</td>
<td>161</td>
<td>85.4</td>
<td>161</td>
<td>85.3</td>
<td>161</td>
<td>85.3</td>
<td>161</td>
<td>85.3</td>
<td>161</td>
</tr>
<tr>
<td>481.wrf</td>
<td>97.9</td>
<td>114</td>
<td>98.1</td>
<td>114</td>
<td>98.1</td>
<td>114</td>
<td>97.9</td>
<td>114</td>
<td>98.1</td>
<td>114</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>232</td>
<td>84.2</td>
<td>233</td>
<td>83.7</td>
<td>233</td>
<td>83.5</td>
<td>232</td>
<td>84.2</td>
<td>233</td>
<td>83.7</td>
</tr>
</tbody>
</table>

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 Tue May  3 18:48:45 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
SPEC CFP2006 Result

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

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

SPECfp2006 = 84.4
SPECfp_base2006 = 82.7

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation
Test date: May-2016
Hardware Availability: Sep-2015
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 ~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.

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**

ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

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

SPECfp2006 = 84.4  
SPECfp_base2006 = 82.7

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

### Base Compiler Invocation

- **C benchmarks:**  
  ```sh
icl -Qvc12 -Qstd=c99
```

- **C++ benchmarks:**  
  ```sh
icl -Qvc12
```

- **Fortran benchmarks:**  
  ```sh
ifort
```

- **Benchmarks using both Fortran and C:**  
  ```sh
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_GETLINE_TEST  
- 453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER -names:lowercase  
- 459.GemsFDTD: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL  
- 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:**  
  ```sh
-QxCORE-AVX2 -Qipo -O3 -Qprec-div -Qparallel -Qansi-alias -Qopt-prefetch /F1000000000
```

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

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

Continued on next page
SPEC CFP2006 Result

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

| SPECfp2006 = 84.4 |
| SPECfp_base2006 = 82.7 |

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

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

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
- -QxCORE-AVX2 -Qipo -O3 -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 -O3 -Qprec-div -Oa /F1000000000 shlW64M.lib
-link /FORCE:MULTIPLE
447.dealII: basepeak = yes
450.soplex: basepeak = yes

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

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

SPECfp2006 = 84.4
SPECfp_base2006 = 82.7

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

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)
-Qipo -O3 -Qprec-div -Qunroll14 -Qauto -Qinline-calloc
/F1000000000

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

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

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.