



# SPEC® CFP2006 Result

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ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECfp®2006 = 63.3

ASUS Q170M-C motherboard (Intel Pentium G4500T)

SPECfp\_base2006 = 62.4

CPU2006 license: 13

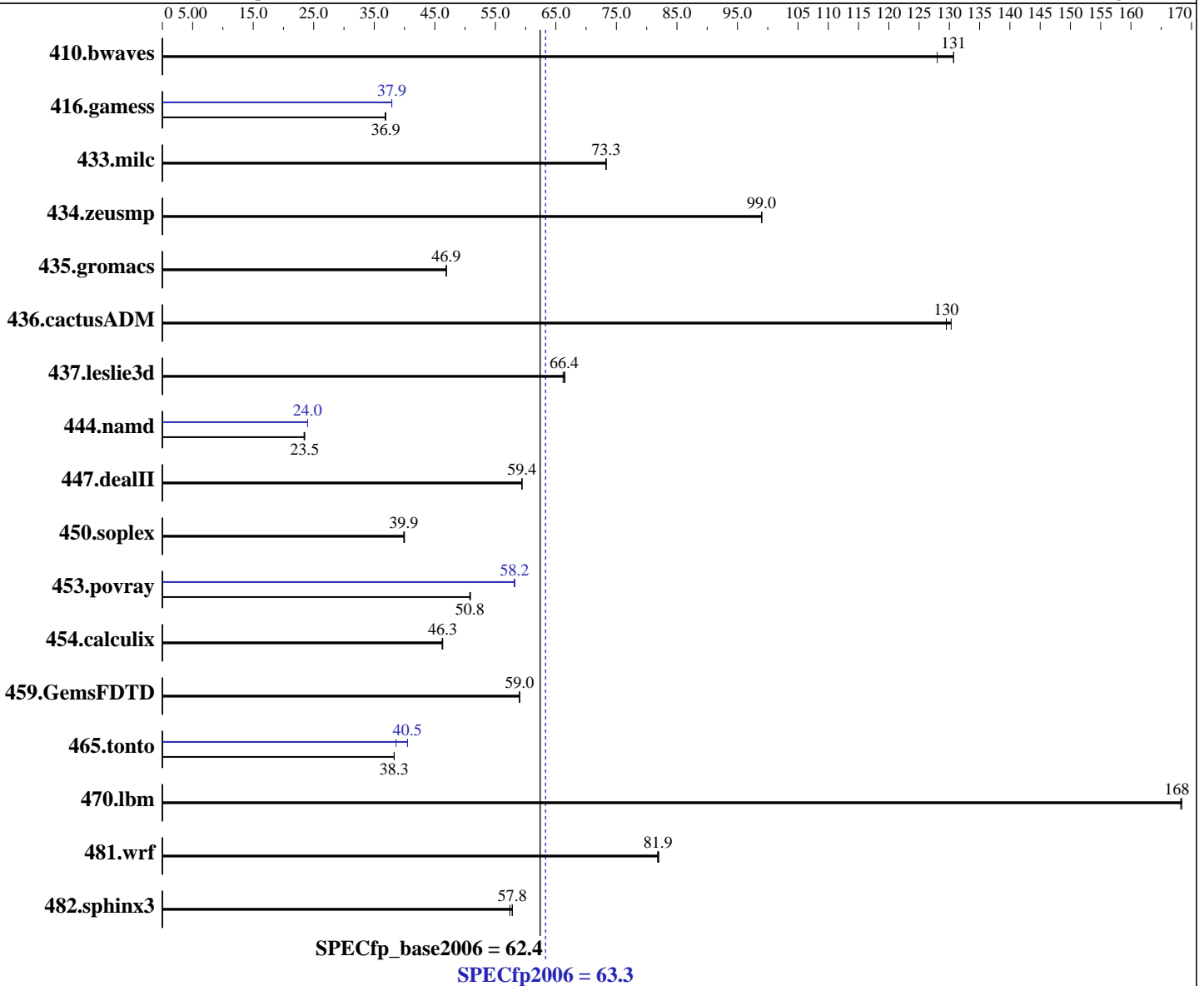
Test date: Apr-2016

Test sponsor: Intel Corporation

Hardware Availability: Sep-2015

Tested by: Intel Corporation

Software Availability: Aug-2015



## Hardware

CPU Name: Intel Pentium G4500T  
 CPU Characteristics:  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 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: Yes

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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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	106	128	104	131	<b>104</b>	<b>131</b>	106	128	104	131	<b>104</b>	<b>131</b>
416.gamess	<b>531</b>	<b>36.9</b>	531	36.9	532	36.8	517	37.9	516	37.9	<b>516</b>	<b>37.9</b>
433.milc	125	73.3	<b>125</b>	<b>73.3</b>	125	73.3	125	73.3	<b>125</b>	<b>73.3</b>	125	73.3
434.zeusmp	91.9	99.0	<b>91.9</b>	<b>99.0</b>	91.9	99.0	91.9	99.0	<b>91.9</b>	<b>99.0</b>	91.9	99.0
435.gromacs	152	46.9	152	46.9	<b>152</b>	<b>46.9</b>	152	46.9	152	46.9	<b>152</b>	<b>46.9</b>
436.cactusADM	<b>92.3</b>	<b>130</b>	92.3	130	91.7	130	<b>92.3</b>	<b>130</b>	92.3	130	91.7	130
437.leslie3d	141	66.5	<b>142</b>	<b>66.4</b>	142	66.2	141	66.5	<b>142</b>	<b>66.4</b>	142	66.2
444.namd	342	23.4	342	23.5	<b>342</b>	<b>23.5</b>	<b>334</b>	<b>24.0</b>	334	24.0	334	24.0
447.dealII	<b>193</b>	<b>59.4</b>	193	59.4	193	59.4	<b>193</b>	<b>59.4</b>	193	59.4	193	59.4
450.soplex	<b>209</b>	<b>39.9</b>	209	40.0	209	39.9	<b>209</b>	<b>39.9</b>	209	40.0	209	39.9
453.povray	105	50.8	105	50.9	<b>105</b>	<b>50.8</b>	91.4	58.2	<b>91.4</b>	<b>58.2</b>	91.5	58.1
454.calculix	178	46.3	178	46.2	<b>178</b>	<b>46.3</b>	178	46.3	178	46.2	<b>178</b>	<b>46.3</b>
459.GemsFDTD	180	59.0	<b>180</b>	<b>59.0</b>	180	59.0	180	59.0	<b>180</b>	<b>59.0</b>	180	59.0
465.tonto	<b>257</b>	<b>38.3</b>	257	38.3	257	38.3	243	40.5	<b>243</b>	<b>40.5</b>	255	38.6
470.lbm	81.7	168	81.6	168	<b>81.6</b>	<b>168</b>	81.7	168	81.6	168	<b>81.6</b>	<b>168</b>
481.wrf	136	82.0	<b>136</b>	<b>81.9</b>	137	81.8	136	82.0	<b>136</b>	<b>81.9</b>	137	81.8
482.sphinx3	337	57.8	340	57.4	<b>337</b>	<b>57.8</b>	337	57.8	340	57.4	<b>337</b>	<b>57.8</b>

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 CltF832E4885A95 Mon Apr 25 18:00:58 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 ~3001 Mhz
BIOS Version  : American Megatrends Inc. 0704, 1/12/2016
Total Physical Memory: 8,070 MB
```

Trying 'wmic cpu get /value'

```
DeviceID      : CPU0
L2CacheSize   : 512
L3CacheSize   : 3072
MaxClockSpeed : 3001
Name          : Intel(R) Pentium(R) CPU G4500T @ 3.00GHz
NumberOfCores : 2
NumberOfLogicalProcessors: 2
```

(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
```



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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  
 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:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias  
-Qopt-prefetch /F1000000000

C++ benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias  
-Qopt-prefetch -Qcxx-features /F1000000000 sh1w64M.lib  
-link /FORCE:MULTIPLE

Fortran benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias  
-Qopt-prefetch /F1000000000

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

-QxSSE4.2 -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: -QxSSE4.2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Oa /F1000000000 shlw64M.lib  
-link /FORCE:MULTIPLE

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

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## Peak Optimization Flags (Continued)

```
453.povray: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
           -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F1000000000
           shlW64M.lib -link /FORCE:MULTIPLE
```

Fortran benchmarks:

410.bwaves: basepeak = yes

```
416.gamess: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
           -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias
           -Qscalar-rep- /F1000000000
```

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

```
465.tonto: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
           -Qipo -O3 -Qprec-div- -Qunroll4 -Qauto -Qinline-alloc
           /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

<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>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Jul 12 11:02:39 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 12 July 2016.