



# SPEC® CFP2006 Result

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ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECfp®2006 = 56.5

ASUS H97M-PLUS Motherboard (Intel Pentium G3450)

SPECfp\_base2006 = 55.7

CPU2006 license: 13

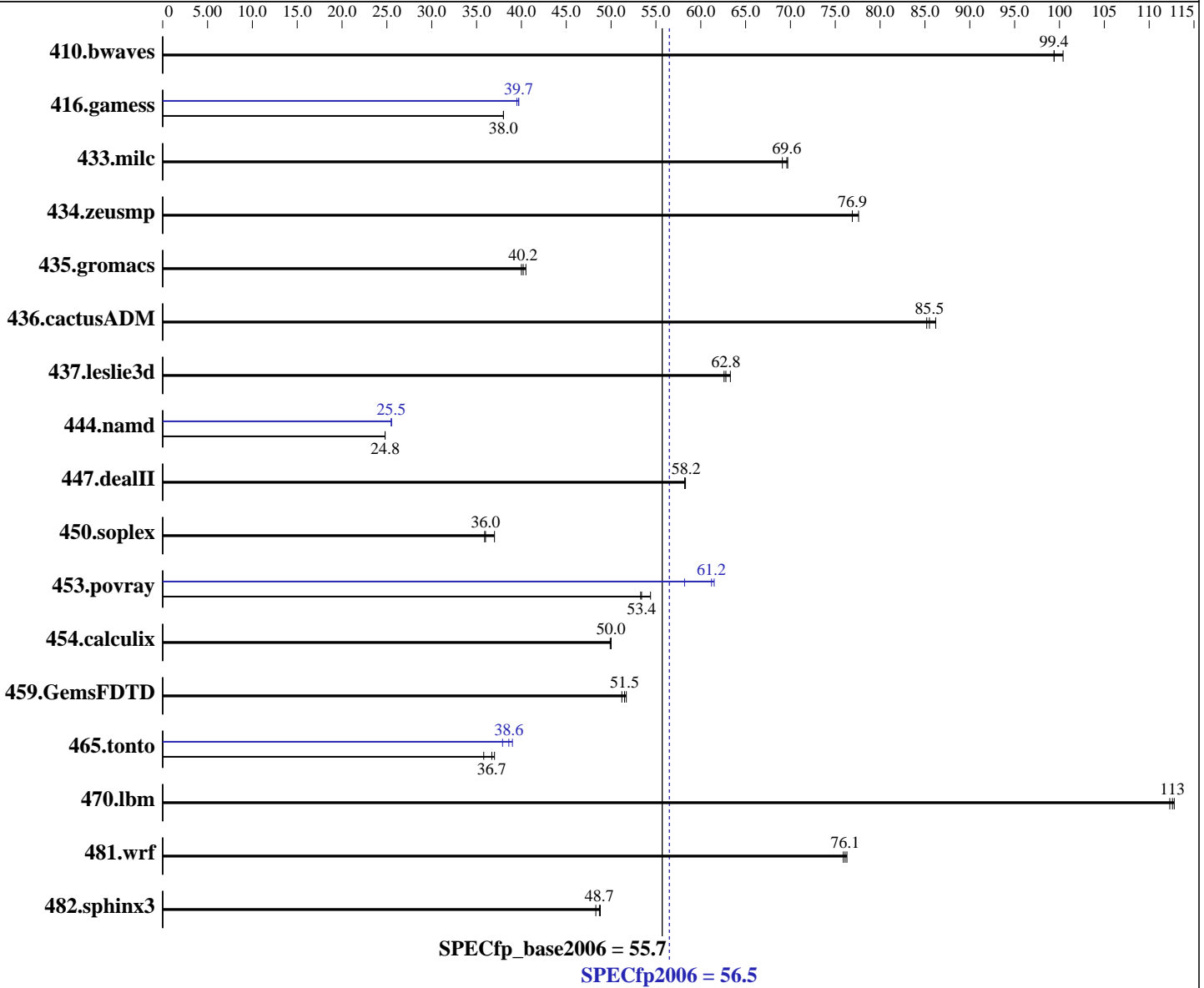
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Nov-2014

Hardware Availability: Jun-2014

Software Availability: Oct-2013



### Hardware

CPU Name: Intel Pentium G3450  
 CPU Characteristics:  
 CPU MHz: 3400  
 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 8.1 Pro  
 6.3.9600 N/A Build 9600  
 Compiler: C/C++: Version 14.0.1.139 of Intel C++ Studio XE for Windows;  
 Fortran: Version 14.0.1.139 of Intel Fortran Studio XE for Windows;  
 Libraries: Version 16.00.30319.01 of Microsoft Visual Studio 2010 Professional SP1  
 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 PC3-12800U-11)  
 Disk Subsystem: 1 TB SATA 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 10.0 from <http://www.microquill.com/>

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b><u>137</u></b>	<b><u>99.4</u></b>	137	99.4	135	100	<b><u>137</u></b>	<b><u>99.4</u></b>	137	99.4	135	100
416.gamess	<b><u>515</u></b>	<b><u>38.0</u></b>	515	38.0	516	38.0	494	39.7	495	39.5	<b><u>494</u></b>	<b><u>39.7</u></b>
433.milc	132	69.7	<b><u>132</u></b>	<b><u>69.6</u></b>	133	69.1	132	69.7	<b><u>132</u></b>	<b><u>69.6</u></b>	133	69.1
434.zeusmp	117	77.6	118	76.9	<b><u>118</u></b>	<b><u>76.9</u></b>	117	77.6	118	76.9	<b><u>118</u></b>	<b><u>76.9</u></b>
435.gromacs	178	40.0	176	40.5	<b><u>178</u></b>	<b><u>40.2</u></b>	178	40.0	176	40.5	<b><u>178</u></b>	<b><u>40.2</u></b>
436.cactusADM	139	86.2	140	85.2	<b><u>140</u></b>	<b><u>85.5</u></b>	139	86.2	140	85.2	<b><u>140</u></b>	<b><u>85.5</u></b>
437.leslie3d	149	63.3	150	62.6	<b><u>150</u></b>	<b><u>62.8</u></b>	149	63.3	150	62.6	<b><u>150</u></b>	<b><u>62.8</u></b>
444.namd	323	24.8	323	24.8	<b><u>323</u></b>	<b><u>24.8</u></b>	315	25.5	<b><u>315</u></b>	<b><u>25.5</u></b>	315	25.5
447.dealII	197	58.2	196	58.3	<b><u>196</u></b>	<b><u>58.2</u></b>	197	58.2	196	58.3	<b><u>196</u></b>	<b><u>58.2</u></b>
450.soplex	<b><u>232</u></b>	<b><u>36.0</u></b>	232	35.9	225	37.0	<b><u>232</u></b>	<b><u>36.0</u></b>	232	35.9	225	37.0
453.povray	<b><u>99.6</u></b>	<b><u>53.4</u></b>	99.8	53.3	97.8	54.4	86.5	61.5	91.4	58.2	<b><u>86.9</u></b>	<b><u>61.2</u></b>
454.calculix	165	50.0	165	49.9	<b><u>165</u></b>	<b><u>50.0</u></b>	165	50.0	165	49.9	<b><u>165</u></b>	<b><u>50.0</u></b>
459.GemsFDTD	205	51.7	207	51.2	<b><u>206</u></b>	<b><u>51.5</u></b>	205	51.7	207	51.2	<b><u>206</u></b>	<b><u>51.5</u></b>
465.tonto	266	37.0	<b><u>268</u></b>	<b><u>36.7</u></b>	275	35.8	259	37.9	252	39.0	<b><u>255</u></b>	<b><u>38.6</u></b>
470.lbm	<b><u>122</u></b>	<b><u>113</u></b>	122	112	122	113	<b><u>122</u></b>	<b><u>113</u></b>	122	112	122	113
481.wrf	146	76.3	<b><u>147</u></b>	<b><u>76.1</u></b>	147	75.9	146	76.3	<b><u>147</u></b>	<b><u>76.1</u></b>	147	75.9
482.sphinx3	400	48.8	403	48.3	<b><u>400</u></b>	<b><u>48.7</u></b>	400	48.8	403	48.3	<b><u>400</u></b>	<b><u>48.7</u></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 14.0 was set up to generate 64-bit binaries with the command:  
 "ipsxe-comp-vars.bat intel64 vs2010" (shortcut provided in the Intel(r) Parallel Studio XE 2013 program folder)

## Platform Notes

Sysinfo program C:\SPEC14.0\Docs\sysinfo  
 \$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c  
 running on Clt10C37B4C81B7 Wed Nov 5 21:56:04 2014

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 8.1 Pro
OS Version    : 6.3.9600 N/A Build 9600
System Manufacturer: ASUS
System Model   : All Series
Processor(s)  : 1 Processor(s) Installed.
               [01]: Intel64 Family 6 Model 60 Stepping 3 GenuineIntel ~3400 Mhz
BIOS Version  : American Megatrends Inc. 2202, 7/11/2014
Total Physical Memory: 8,071 MB
```

Trying 'wmic cpu get /value'

```
DeviceID      : CPU0
L2CacheSize   : 512
L3CacheSize   : 3072
MaxClockSpeed : 3400
Name          : Intel(R) Pentium(R) CPU G3450 @ 3.40GHz
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

OMP\_NUM\_THREADS set to number of processors cores  
KMP\_AFFINITY set to granularity=fine,scatter  
Binaries compiled on a system with 1x Intel Core i7-860 CPU  
+ 8GB memory using Windows 7 Enterprise 64-bit

## Base Compiler Invocation

C benchmarks:

```
icl -Qvc10 -Qstd=c99
```

C++ benchmarks:

```
icl -Qvc10
```

Fortran benchmarks:

```
ifort
```

Benchmarks using both Fortran and C:

```
icl -Qvc10 -Qstd=c99 ifort
```



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## 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
-Qoption,cpp,--ms_incompat_treatment_of_commas_in_macros
450.soplex: -DSPEC_CPU_P64
453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_NEED_INVHYP -DNEED_INVHYP
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 -Qauto-ilp32 /F1000000000

```

C++ benchmarks:

```

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qcxx-features -Qauto-ilp32 /F1000000000 shlw64M.lib
-link /FORCE:MULTIPLE

```

Fortran benchmarks:

```

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

```

Benchmarks using both Fortran and C:

```

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qauto-ilp32 /F1000000000

```

## Peak Compiler Invocation

C benchmarks:

```

icl -Qvc10 -Qstd=c99

```

C++ benchmarks:

```

icl -Qvc10

```

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## Peak Compiler Invocation (Continued)

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc10 -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 -Qauto-ilp32 /F1000000000  
sh1W64M.lib -link /FORCE:MULTIPLE

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -QxSSE4.2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32  
/F1000000000 sh1W64M.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

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## Peak Optimization Flags (Continued)

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-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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-windows.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-windows.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Dec 16 13:11:31 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 16 December 2014.