



# SPEC<sup>®</sup> CFP2006 Result

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ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECfp<sup>®</sup>\_rate2006 = 67.5

ASUSTek M4A89GTD PRO/USB3 (Phenom II X4 965)

SPECfp\_rate\_base2006 = 66.7

CPU2006 license: 13

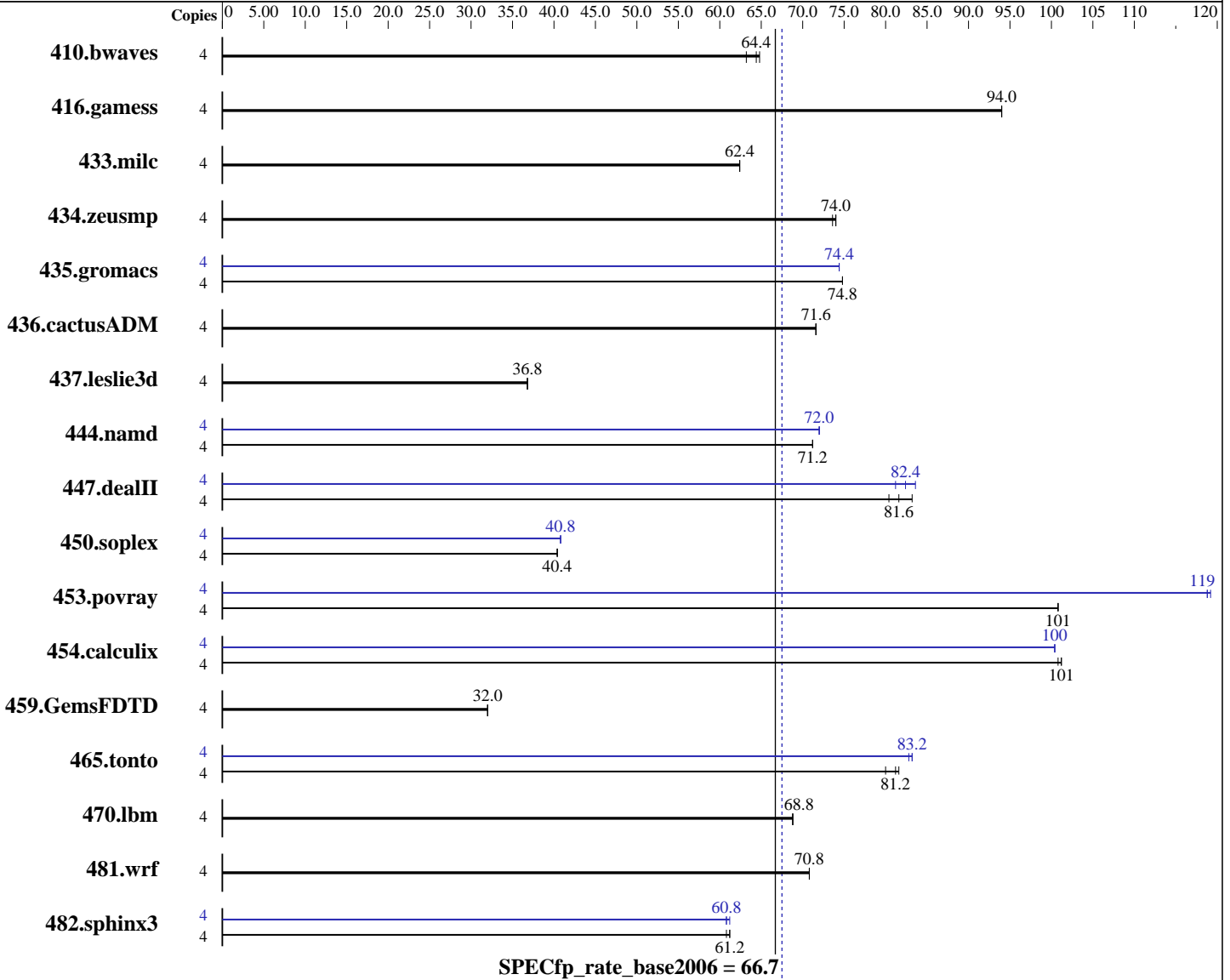
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jun-2011

Hardware Availability: Feb-2011

Software Availability: Apr-2011



## Hardware

CPU Name: AMD Phenom II X4 965  
 CPU Characteristics:  
 CPU MHz: 3400  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 512 KB I+D on chip per core

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## Software

Operating System: Windows 7 Ultimate (64-bit)  
 Compiler: Intel C++ Compiler XE for Intel 64  
 Version 12.0.3.176 Build 20110309  
 Intel Visual Fortran Compiler XE for Intel 64  
 Version 12.0.3.176 Build 20110309  
 Microsoft Visual Studio 2008 Professional SP1  
 (for libraries)  
 Auto Parallel: No  
 File System: NTFS

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L3 Cache: 6 MB I+D on chip per chip  
Other Cache: None  
Memory: 4 GB (2 x 2 GB 2Rx4 PC3-10600U-9)  
Disk Subsystem: 1 TB Seagate SATA, 7200 RPM  
Other Hardware: None

System State: Default  
Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: SmartHeap Library Version 9.01 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	861	63.2	839	64.8	<b>846</b>	<b>64.4</b>	4	861	63.2	839	64.8	<b>846</b>	<b>64.4</b>
416.gamess	4	835	94.0	834	94.0	<b>834</b>	<b>94.0</b>	4	835	94.0	834	94.0	<b>834</b>	<b>94.0</b>
433.milc	4	589	62.4	589	62.4	<b>589</b>	<b>62.4</b>	4	589	62.4	589	62.4	<b>589</b>	<b>62.4</b>
434.zeusmp	4	493	73.6	492	74.0	<b>493</b>	<b>74.0</b>	4	493	73.6	492	74.0	<b>493</b>	<b>74.0</b>
435.gromacs	4	382	74.8	382	74.8	<b>382</b>	<b>74.8</b>	4	383	74.4	383	74.4	<b>383</b>	<b>74.4</b>
436.cactusADM	4	669	71.6	668	71.6	<b>669</b>	<b>71.6</b>	4	669	71.6	668	71.6	<b>669</b>	<b>71.6</b>
437.leslie3d	4	1020	36.8	<b>1020</b>	<b>36.8</b>	1021	36.8	4	1020	36.8	<b>1020</b>	<b>36.8</b>	1021	36.8
444.namd	4	<b>450</b>	<b>71.2</b>	450	71.2	450	71.2	4	445	72.0	<b>445</b>	<b>72.0</b>	445	72.0
447.dealII	4	549	83.2	569	80.4	<b>560</b>	<b>81.6</b>	4	<b>556</b>	<b>82.4</b>	548	83.6	564	81.2
450.soplex	4	826	40.4	<b>826</b>	<b>40.4</b>	826	40.4	4	<b>814</b>	<b>40.8</b>	815	40.8	814	40.8
453.povray	4	211	101	211	101	<b>211</b>	<b>101</b>	4	<b>179</b>	<b>119</b>	178	119	179	119
454.calculix	4	326	101	327	101	<b>326</b>	<b>101</b>	4	328	100	<b>328</b>	<b>100</b>	328	100
459.GemsFDTD	4	1333	32.0	<b>1332</b>	<b>32.0</b>	1331	32.0	4	1333	32.0	<b>1332</b>	<b>32.0</b>	1331	32.0
465.tonto	4	<b>484</b>	<b>81.2</b>	483	81.6	491	80.0	4	<b>473</b>	<b>83.2</b>	473	83.2	476	82.8
470.lbm	4	797	68.8	<b>797</b>	<b>68.8</b>	799	68.8	4	797	68.8	<b>797</b>	<b>68.8</b>	799	68.8
481.wrf	4	630	70.8	<b>631</b>	<b>70.8</b>	633	70.8	4	630	70.8	<b>631</b>	<b>70.8</b>	633	70.8
482.sphinx3	4	<b>1277</b>	<b>61.2</b>	1275	61.2	1284	60.8	4	1277	61.2	<b>1279</b>	<b>60.8</b>	1280	60.8

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.  
The start command with the /affinity switch was used to bind processes to cores

## General Notes

Tested systems can be used with Shin-G ATX case,  
PC Power and Cooling 1200W power supply

## Base Compiler Invocation

C benchmarks:  
icl -Qvc9 -Qstd=c99

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## Base Compiler Invocation (Continued)

C++ benchmarks:  
icl -Qvc9  
  
Fortran benchmarks:  
ifort  
  
Benchmarks using both Fortran and C:  
icl -Qvc9 -Qstd=c99 ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_P64 -names:lowercase  
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  
450.soplex: -DSPEC\_CPU\_P64  
453.povray: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_WINDOWS\_ICL  
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:  
/arch:SSE3 -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32  
/F1000000000 -link /FORCE:MULTIPLE  
  
C++ benchmarks:  
/arch:SSE3 -Qipo -O3 -Qprec-div- -Qansi-alias -Qcxx-features  
-Qauto-ilp32 /F1000000000 shlw64M.lib -link /FORCE:MULTIPLE  
  
Fortran benchmarks:  
/arch:SSE3 -Qipo -O3 -Qprec-div- -Qansi-alias /F1000000000  
-link /FORCE:MULTIPLE  
  
Benchmarks using both Fortran and C:  
/arch:SSE3 -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32  
/F1000000000 -link /FORCE:MULTIPLE



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## Peak Compiler Invocation

C benchmarks:  
icl -Qvc9 -Qstd=c99  
C++ benchmarks:  
icl -Qvc9  
Fortran benchmarks:  
ifort  
Benchmarks using both Fortran and C:  
icl -Qvc9 -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: /arch:SSE3 -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias  
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE  
C++ benchmarks:  
444.namd: /arch:SSE3(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: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias  
-Qscalar-rep- -Qauto-ilp32 /F1000000000 shlW64M.lib  
-link /FORCE:MULTIPLE  
450.soplex: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib  
-link /FORCE:MULTIPLE  
453.povray: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32  
/F1000000000 shlW64M.lib -link /FORCE:MULTIPLE

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes  
416.gamess: basepeak = yes  
434.zeusmp: basepeak = yes  
437.leslie3d: basepeak = yes  
459.GemsFDTD: basepeak = yes  
465.tonto: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000  
-link /FORCE:MULTIPLE

Benchmarks using both Fortran and C:

435.gromacs: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32  
/F1000000000 -link /FORCE:MULTIPLE  
436.cactusADM: basepeak = yes  
454.calculix: /arch:SSE3 -Qipo -O3 -Qprec-div- -Qauto-ilp32  
/F1000000000 -link /FORCE:MULTIPLE  
481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.html>  
<http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.xml>  
<http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.xml>

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

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