# SPEC® CFP2006 Result

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## ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

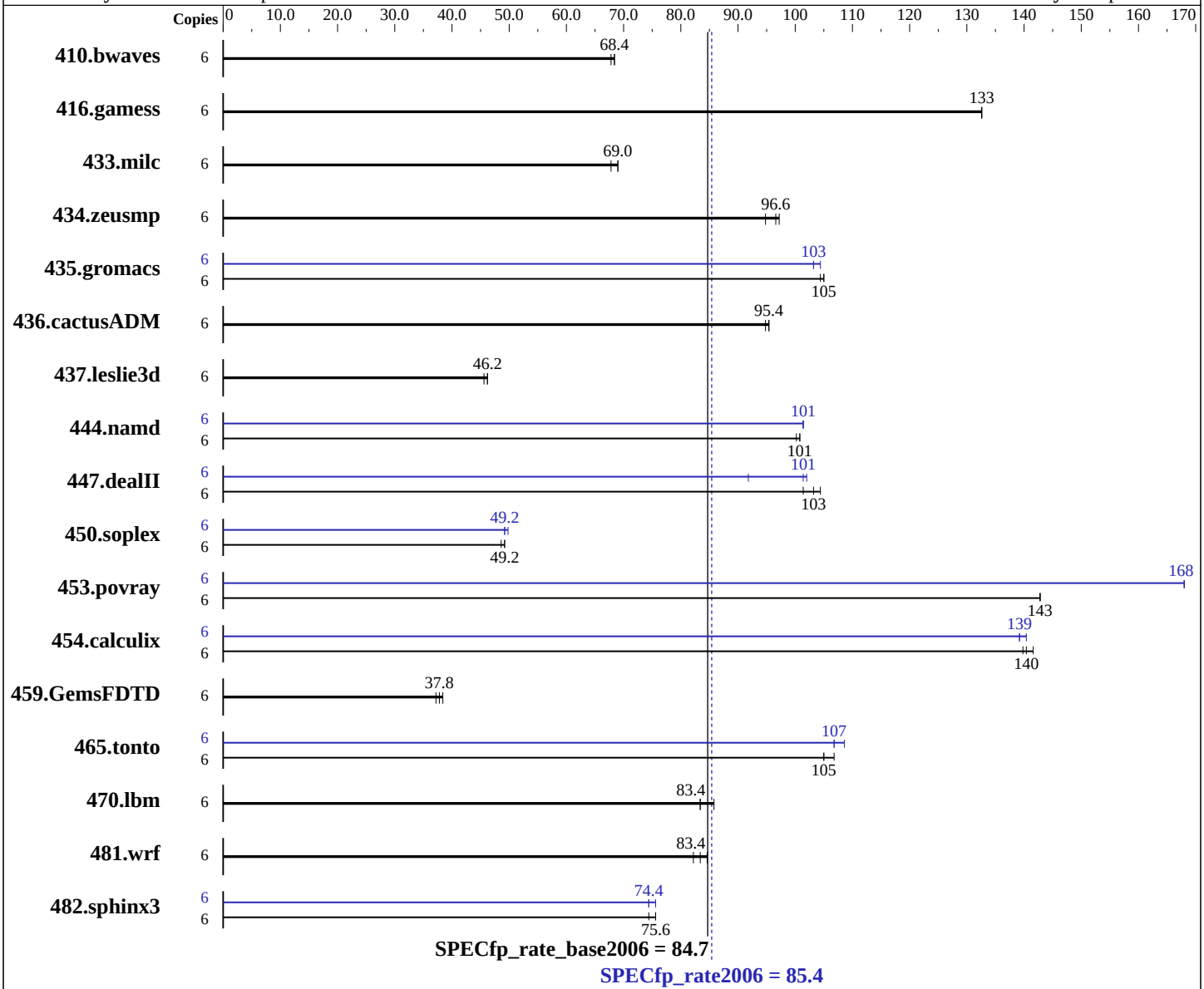
ASUSTek M4A89GTD PRO/USB3 (Phenom II X6 1090T)

SPECfp®_rate2006 = 85.4

SPECfp_rate_base2006 = 84.7

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

**Test date:** Jul-2011
**Hardware Availability:** Feb-2011
**Software Availability:** Apr-2011




## Hardware

| | |
|---|---|
| CPU Name: | AMD Phenom II X6 1090T |
| CPU Characteristics: | AMD Turbo CORE technology up to 3.6 GHz |
| CPU MHz: | 3200 |
| FPU: | Integrated |
| CPU(s) enabled: | 6 cores, 1 chip, 6 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<br>Intel Visual Fortran Compiler XE for Intel 64 Version 12.0.3.176 Build 20110309<br>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: 8 GB (2 x 4 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 | 6 | 1196 | 68.4 | **1196** | **68.4** | 1203 | 67.8 | 6 | 1196 | 68.4 | **1196** | **68.4** | 1203 | 67.8 |
| 416.gamess | 6 | **887** | **133** | 886 | 133 | 887 | 133 | 6 | **887** | **133** | 886 | 133 | 887 | 133 |
| 433.milc | 6 | 800 | 69.0 | **800** | **69.0** | 814 | 67.8 | 6 | 800 | 69.0 | **800** | **69.0** | 814 | 67.8 |
| 434.zeusmp | 6 | 562 | 97.2 | **565** | **96.6** | 576 | 94.8 | 6 | 562 | 97.2 | **565** | **96.6** | 576 | 94.8 |
| 435.gromacs | 6 | **409** | **105** | 409 | 105 | 409 | 104 | 6 | **415** | **103** | 415 | 103 | 411 | 104 |
| 436.cactusADM | 6 | **752** | **95.4** | 751 | 95.4 | 757 | 94.8 | 6 | **752** | **95.4** | 751 | 95.4 | 757 | 94.8 |
| 437.leslie3d | 6 | **1228** | **46.2** | 1227 | 46.2 | 1243 | 45.6 | 6 | **1228** | **46.2** | 1227 | 46.2 | 1243 | 45.6 |
| 444.namd | 6 | 479 | 101 | **479** | **101** | 479 | 100 | 6 | **474** | **101** | 474 | 101 | 473 | 101 |
| 447.dealII | 6 | **664** | **103** | 657 | 104 | 677 | 101 | 6 | **677** | **101** | 746 | 91.8 | 672 | 102 |
| 450.soplex | 6 | 1016 | 49.2 | **1018** | **49.2** | 1032 | 48.6 | 6 | 1016 | 49.2 | **1012** | **49.2** | 1001 | 49.8 |
| 453.povray | 6 | 224 | 143 | **224** | **143** | 224 | 143 | 6 | **190** | **168** | 190 | 168 | 190 | 168 |
| 454.calculix | 6 | 350 | 142 | **353** | **140** | 355 | 140 | 6 | 356 | 139 | **355** | **139** | 352 | 140 |
| 459.GemsFDTD | 6 | 1660 | 38.4 | **1689** | **37.8** | 1698 | 37.2 | 6 | 1660 | 38.4 | **1689** | **37.8** | 1698 | 37.2 |
| 465.tonto | 6 | 553 | 107 | **562** | **105** | 564 | 105 | 6 | 554 | 107 | **552** | **107** | 544 | 109 |
| 470.lbm | 6 | 964 | 85.8 | **987** | **83.4** | 992 | 83.4 | 6 | 964 | 85.8 | **987** | **83.4** | 992 | 83.4 |
| 481.wrf | 6 | 792 | 84.6 | **806** | **83.4** | 814 | 82.2 | 6 | 792 | 84.6 | **806** | **83.4** | 814 | 82.2 |
| 482.sphinx3 | 6 | 1546 | 75.6 | **1549** | **75.6** | 1572 | 74.4 | 6 | **1572** | **74.4** | 1572 | 74.4 | 1551 | 75.6 |

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
```

Continued on next page

## 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

## 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.

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