# SPEC® CFP2006 Result

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## ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

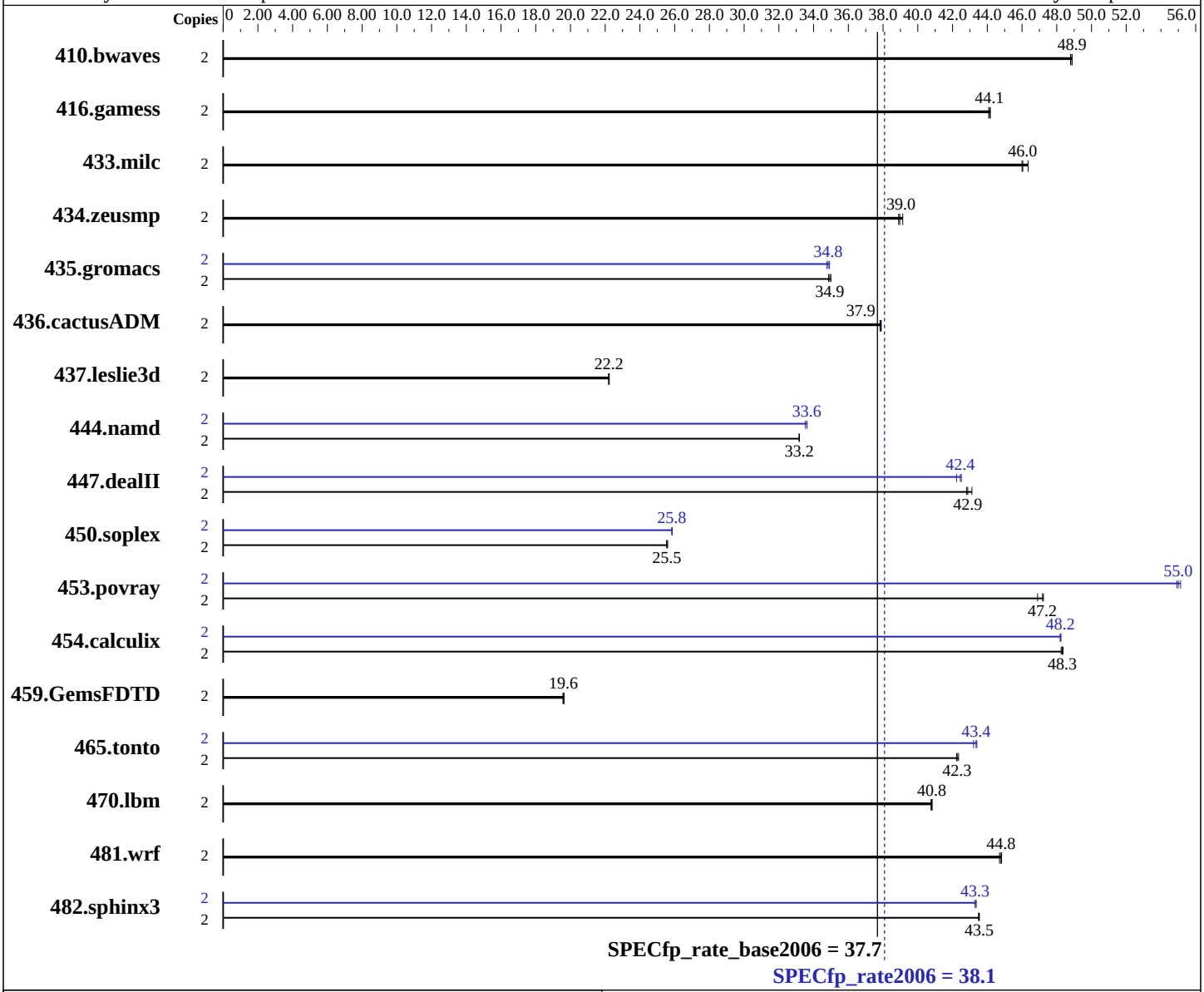
## Asus M4A89GTD-PRO (Phenom II X2 555)

SPECfp®_rate2006 = 38.1

SPECfp_rate_base2006 = 37.7

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

**Test date:** May-2011
**Hardware Availability:** Apr-2010
**Software Availability:** Apr-2011




## Hardware

| | |
|---|---|
| CPU Name: | AMD Phenom II X2 555 |
| CPU Characteristics: | |
| CPU MHz: | 3200 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 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 2Rx8 PC3-10600U-9)
Disk Subsystem: Seagate 1 TB 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 | 2 | 556 | 48.9 | 557 | 48.8 | **556** | **48.9** | 2 | 556 | 48.9 | 557 | 48.8 | **556** | **48.9** |
| 416.gamess | 2 | **887** | **44.1** | 888 | 44.1 | 886 | 44.2 | 2 | **887** | **44.1** | 888 | 44.1 | 886 | 44.2 |
| 433.milc | 2 | 399 | 46.0 | 396 | 46.4 | **399** | **46.0** | 2 | 399 | 46.0 | 396 | 46.4 | **399** | **46.0** |
| 434.zeusmp | 2 | 468 | 38.9 | **467** | **39.0** | 465 | 39.1 | 2 | 468 | 38.9 | **467** | **39.0** | 465 | 39.1 |
| 435.gromacs | 2 | 410 | 34.9 | 408 | 35.0 | **409** | **34.9** | 2 | 409 | 34.9 | 411 | 34.8 | **410** | **34.8** |
| 436.cactusADM | 2 | **631** | **37.9** | 632 | 37.8 | 631 | 37.9 | 2 | **631** | **37.9** | 632 | 37.8 | 631 | 37.9 |
| 437.leslie3d | 2 | **846** | **22.2** | 846 | 22.2 | 847 | 22.2 | 2 | **846** | **22.2** | 846 | 22.2 | 847 | 22.2 |
| 444.namd | 2 | **483** | **33.2** | 484 | 33.2 | 483 | 33.2 | 2 | **477** | **33.6** | 477 | 33.6 | 479 | 33.5 |
| 447.dealII | 2 | **534** | **42.9** | 535 | 42.8 | 531 | 43.1 | 2 | 542 | 42.2 | **539** | **42.4** | 538 | 42.5 |
| 450.soplex | 2 | 652 | 25.6 | **653** | **25.5** | 653 | 25.5 | 2 | 645 | 25.9 | 646 | 25.8 | **645** | **25.8** |
| 453.povray | 2 | 227 | 46.9 | 225 | 47.2 | **226** | **47.2** | 2 | 194 | 54.9 | 193 | 55.1 | **193** | **55.0** |
| 454.calculix | 2 | **341** | **48.3** | 341 | 48.4 | 342 | 48.3 | 2 | **342** | **48.2** | 342 | 48.2 | 342 | 48.2 |
| 459.GemsFDTD | 2 | **1083** | **19.6** | 1084 | 19.6 | 1081 | 19.6 | 2 | **1083** | **19.6** | 1084 | 19.6 | 1081 | 19.6 |
| 465.tonto | 2 | 466 | 42.2 | **466** | **42.3** | 465 | 42.3 | 2 | 455 | 43.2 | **454** | **43.4** | 453 | 43.4 |
| 470.lbm | 2 | 673 | 40.8 | 674 | 40.8 | **674** | **40.8** | 2 | 673 | 40.8 | 674 | 40.8 | **674** | **40.8** |
| 481.wrf | 2 | 498 | 44.8 | **499** | **44.8** | 500 | 44.7 | 2 | 498 | 44.8 | **499** | **44.8** | 500 | 44.7 |
| 482.sphinx3 | 2 | 895 | 43.5 | **895** | **43.5** | 896 | 43.5 | 2 | **900** | **43.3** | 899 | 43.4 | 900 | 43.3 |

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-revB.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-revB.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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