# SPEC® CFP2006 Result

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## ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

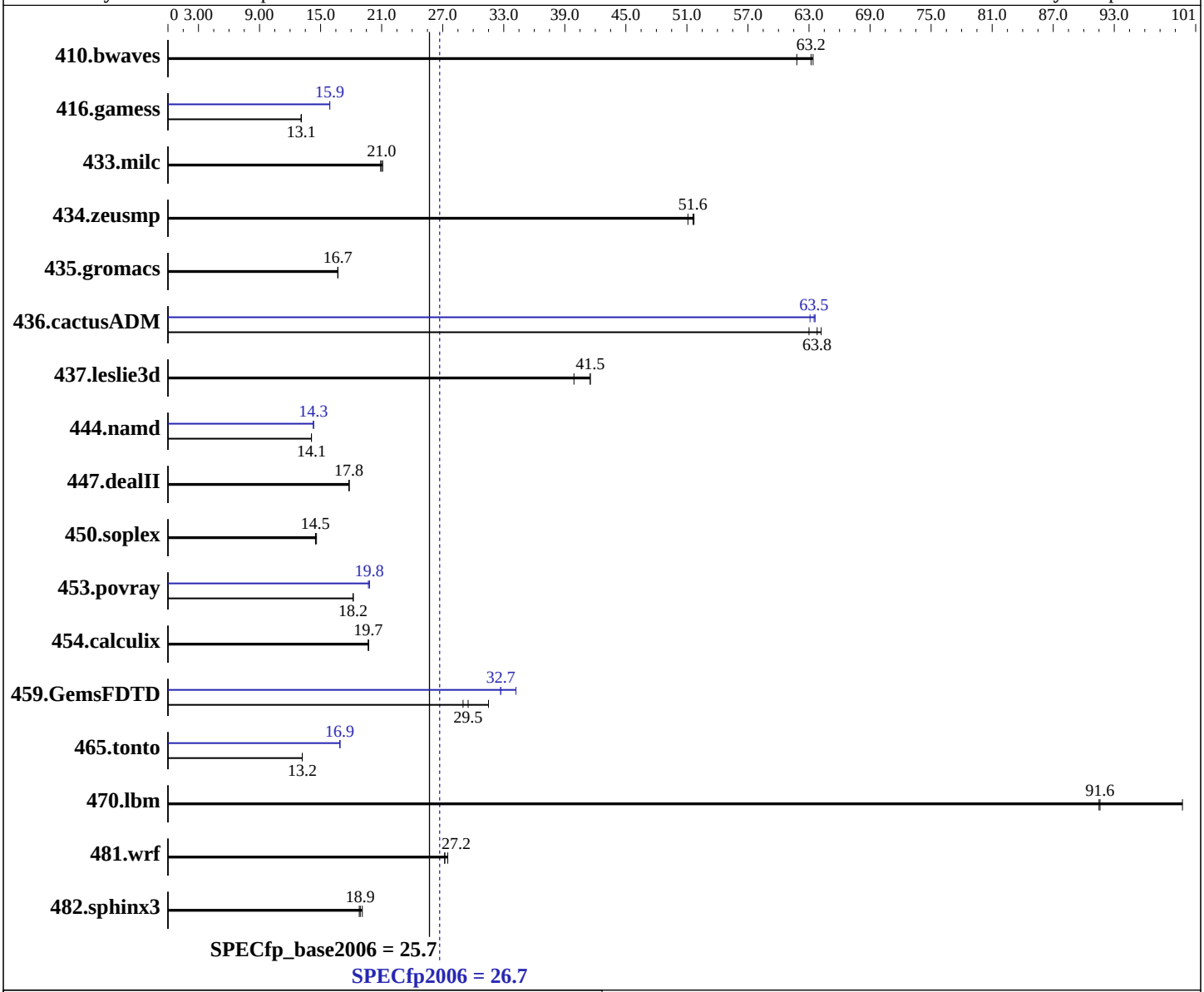
## ASUS Sabertooth 990FX (AMD FX-8150)

SPECfp®2006 = 26.7

SPECfp_base2006 = 25.7

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

**Test date:** Oct-2011
**Hardware Availability:** Nov-2011
**Software Availability:** Apr-2011




## Hardware

| | |
|---|---|
| CPU Name: | AMD FX-8150 |
| CPU Characteristics: | AMD Turbo CORE technology up to 4.20 GHz |
| CPU MHz: | 3600 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 1 chip, 8 cores/chip |
| CPU(s) orderable: | 1 chip |

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## Software

| | |
|---|---|
| Operating System: | Windows 7 Ultimate SP1 (64-bit) |
| Compiler: | C/C++: Version 12.0.3.176 of Intel C++ Studio XE for Windows; Fortran: Version 12.0.3.176 of Intel Visual Fortran Studio XE for Windows; Libraries: Version 15.00.30729.01 of Microsoft Visual Studio 2008 Professional SP1 |
| Auto Parallel: | Yes |
| File System: | NTFS |

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| | |
|---|---|
| Primary Cache: | 256 KB I on chip per chip, 64 KB I shared / 2 cores; 16 KB D on chip per core |
| Secondary Cache: | 8 MB I+D on chip per chip, 2 MB shared / 2 cores |
| L3 Cache: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 8 GB (2 x 4 GB 2Rx4 PC3-10600U-9) |
| Disk Subsystem: | Intel 160GB SSD |
| 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 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | **215** | **63.2** | 220 | 61.8 | 214 | 63.4 | **215** | **63.2** | 220 | 61.8 | 214 | 63.4 |
| 416.gamess | **1493** | **13.1** | 1493 | 13.1 | 1492 | 13.1 | 1234 | 15.9 | **1234** | **15.9** | 1233 | 15.9 |
| 433.milc | 440 | 20.9 | 436 | 21.1 | **437** | **21.0** | 440 | 20.9 | 436 | 21.1 | **437** | **21.0** |
| 434.zeusmp | **176** | **51.6** | 178 | 51.1 | 176 | 51.7 | **176** | **51.6** | 178 | 51.1 | 176 | 51.7 |
| 435.gromacs | **429** | **16.7** | 429 | 16.7 | 428 | 16.7 | **429** | **16.7** | 429 | 16.7 | 428 | 16.7 |
| 436.cactusADM | **187** | **63.8** | 190 | 63.0 | 186 | 64.2 | 188 | 63.6 | 190 | 63.1 | **188** | **63.5** |
| 437.leslie3d | 226 | 41.5 | 235 | 39.9 | **226** | **41.5** | 226 | 41.5 | 235 | 39.9 | **226** | **41.5** |
| 444.namd | 568 | 14.1 | 568 | 14.1 | **568** | **14.1** | 562 | 14.3 | 562 | 14.3 | **562** | **14.3** |
| 447.dealII | 643 | 17.8 | 643 | 17.8 | **643** | **17.8** | 643 | 17.8 | 643 | 17.8 | **643** | **17.8** |
| 450.soplex | 573 | 14.6 | 576 | 14.5 | **576** | **14.5** | 573 | 14.6 | 576 | 14.5 | **576** | **14.5** |
| 453.povray | 293 | 18.2 | 293 | 18.2 | **293** | **18.2** | 269 | 19.7 | 268 | 19.8 | **269** | **19.8** |
| 454.calculix | **419** | **19.7** | 419 | 19.7 | 419 | 19.7 | **419** | **19.7** | 419 | 19.7 | 419 | 19.7 |
| 459.GemsFDTD | **360** | **29.5** | 337 | 31.5 | 365 | 29.0 | 325 | 32.7 | **324** | **32.7** | 310 | 34.2 |
| 465.tonto | 743 | 13.2 | 745 | 13.2 | **744** | **13.2** | 582 | 16.9 | 582 | 16.9 | **582** | **16.9** |
| 470.lbm | 150 | 91.5 | 138 | 99.7 | **150** | **91.6** | 150 | 91.5 | 138 | 99.7 | **150** | **91.6** |
| 481.wrf | **410** | **27.2** | 406 | 27.5 | 410 | 27.2 | **410** | **27.2** | 406 | 27.5 | 410 | 27.2 |
| 482.sphinx3 | 1022 | 19.1 | **1030** | **18.9** | 1037 | 18.8 | 1022 | 19.1 | **1030** | **18.9** | 1037 | 18.8 |

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

## Component Notes

```
Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
System was configured with an ATI HD 6990 discrete graphics card
```

## General Notes

```
OMP_NUM_THREADS set to number of processors cores
KMP_AFFINITY set to granularity=fine,scatter
```

## Base 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

## 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 -Qparallel -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000

C++ benchmarks:
/arch:SSE3 -Qipo -O3 -Qparallel -Qansi-alias -Qopt-prefetch
-Qcxx-features -Qauto-ilp32 -Qprec-div- /F1000000000 shlW64M.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
/arch:SSE3 -Qipo -O3 -Qparallel -Qansi-alias -Qopt-prefetch
/F1000000000

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
`/arch:SSE3 -Qipo -O3 -Qparallel -Qansi-alias -Qopt-prefetch -Qauto-ilp32 /F1000000000`

## 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: `basepeak = yes`

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: `basepeak = yes`

450.soplex: `basepeak = yes`

453.povray: `/arch:SSE3`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32 /F1000000000 shlW64M.lib -link /FORCE:MULTIPLE`

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: /arch:SSE3(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: /arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel /F1000000000

465.tonto: /arch:SSE3(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: /arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qunroll2 -Qauto-ilp32 /F1000000000

454.calculix: basepeak = yes

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.20111012.html
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.20111012.xml
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings-revC.xml

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For other inquiries, please contact webmaster@spec.org.

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