# SPEC® CFP2006 Result



## ASUSTeK Computer Inc.

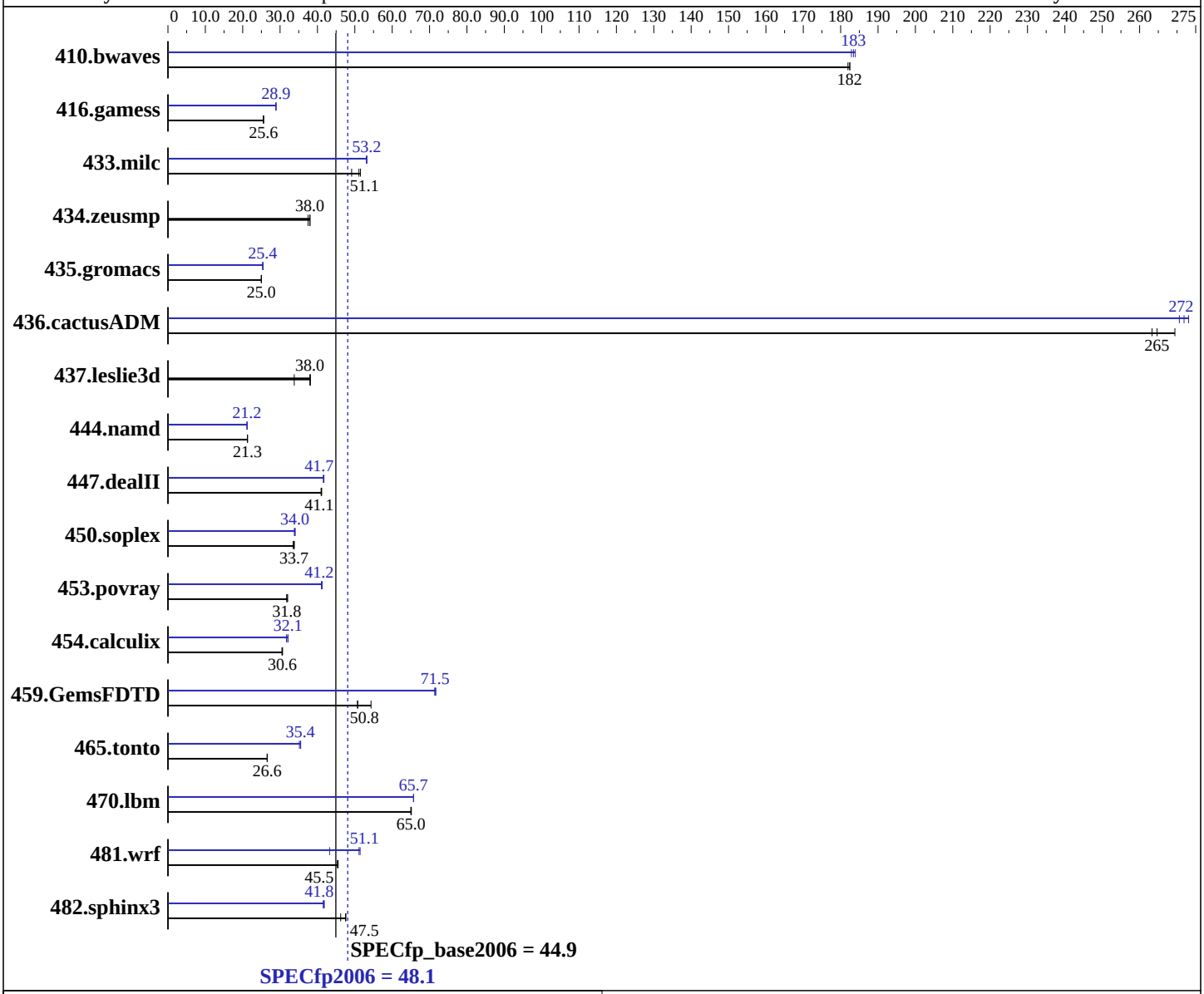
ASUS TS700-E6 (Z8PE-D12X) server system (Intel Xeon X5680)

SPECfp®2006 = 48.1

SPECfp_base2006 = 44.9

**CPU2006 license:** 9016
**Test sponsor:** ASUSTeK Computer Inc.
**Tested by:** ASUSTeK Computer Inc.

**Test date:** Mar-2010
**Hardware Availability:** Mar-2010
**Software Availability:** Jan-2010




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5680 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.60 GHz |
| CPU MHz: | 3333 |
| FPU: | Integrated |
| CPU(s) enabled: | 12 cores, 2 chips, 6 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |

Continued on next page

## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default |
| Compiler: | Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064 |
| Auto Parallel: | Yes |
| File System: | ReiserFS |
| System State: | Run level 3 (multi-user) |

Continued on next page

# SPEC CFP2006 Result



## ASUSTeK Computer Inc.

ASUS TS700-E6 (Z8PE-D12X) server system (Intel Xeon X5680)

SPECfp2006 = 48.1

SPECfp_base2006 = 44.9

**CPU2006 license:** 9016
**Test sponsor:** ASUSTeK Computer Inc.
**Tested by:** ASUSTeK Computer Inc.

**Test date:** Mar-2010
**Hardware Availability:** Mar-2010
**Software Availability:** Jan-2010

L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB PC3-10600R, CL=9)
Disk Subsystem: 1 x 500 GB SATAII, 7200RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 74.7 | 182 | 74.5 | 182 | **74.5** | **182** | **74.1** | **183** | 73.9 | 184 | 74.3 | 183 |
| 416.gamess | 766 | 25.5 | 765 | 25.6 | **766** | **25.6** | 678 | 28.9 | 677 | 28.9 | **678** | **28.9** |
| 433.milc | **180** | **51.1** | 178 | 51.5 | 187 | 49.2 | **173** | **53.2** | 173 | 53.2 | 173 | 53.1 |
| 434.zeusmp | **240** | **38.0** | 243 | 37.5 | 239 | 38.0 | **240** | **38.0** | 243 | 37.5 | 239 | 38.0 |
| 435.gromacs | **286** | **25.0** | 285 | 25.0 | 286 | 25.0 | 280 | 25.5 | **282** | **25.4** | 282 | 25.3 |
| 436.cactusADM | 44.4 | 269 | 45.4 | 263 | **45.2** | **265** | 44.2 | 271 | **44.0** | **272** | 43.8 | 273 |
| 437.leslie3d | 278 | 33.8 | 247 | 38.1 | **248** | **38.0** | 278 | 33.8 | 247 | 38.1 | **248** | **38.0** |
| 444.namd | 377 | 21.3 | 377 | 21.3 | **377** | **21.3** | 379 | 21.2 | 379 | 21.2 | **379** | **21.2** |
| 447.dealII | 278 | 41.1 | **279** | **41.1** | 279 | 41.0 | **274** | **41.7** | 274 | 41.7 | 275 | 41.6 |
| 450.soplex | 249 | 33.5 | 247 | 33.8 | **247** | **33.7** | 247 | 33.8 | **246** | **34.0** | 245 | 34.1 |
| 453.povray | 167 | 31.8 | 166 | 32.0 | **167** | **31.8** | 130 | 41.1 | **129** | **41.2** | 129 | 41.2 |
| 454.calculix | **270** | **30.6** | 271 | 30.5 | 269 | 30.7 | 257 | 32.1 | **257** | **32.1** | 260 | 31.7 |
| 459.GemsFDTD | 195 | 54.3 | **209** | **50.8** | 209 | 50.7 | **148** | **71.5** | 149 | 71.4 | 148 | 71.7 |
| 465.tonto | **371** | **26.6** | 370 | 26.6 | 371 | 26.5 | **278** | **35.4** | 277 | 35.5 | 280 | 35.2 |
| 470.lbm | 211 | 65.1 | 211 | 65.0 | **211** | **65.0** | 209 | 65.8 | 209 | 65.7 | **209** | **65.7** |
| 481.wrf | **245** | **45.5** | 245 | 45.5 | 246 | 45.3 | 258 | 43.2 | **218** | **51.1** | 217 | 51.4 |
| 482.sphinx3 | **410** | **47.5** | 422 | 46.2 | 409 | 47.6 | 466 | 41.8 | 469 | 41.5 | **467** | **41.8** |

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

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
```

## Component Notes

```
Tested system case compliance with Intel EEB 3.61 spec
SSI Server Power Supply 650W or higher
System was configured with ASPEED AST2050 VGA (on board VGA)
```

## Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

## Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

## Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

## Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -ansi-alias

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -parallel -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32 -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias -scalar-rep- -auto-ilp32

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-malloc-options=3 -auto-ilp32

Continued on next page

## Peak Optimization Flags (Continued)

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100316.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100316.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 09:42:49 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 April 2010.