



SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

ASUS RS700D-E6 (Z8NH-D12) server system (Intel Xeon X5680)

SPECfp®2006 = 48.0

SPECfp_base2006 = 45.1

CPU2006 license: 9016

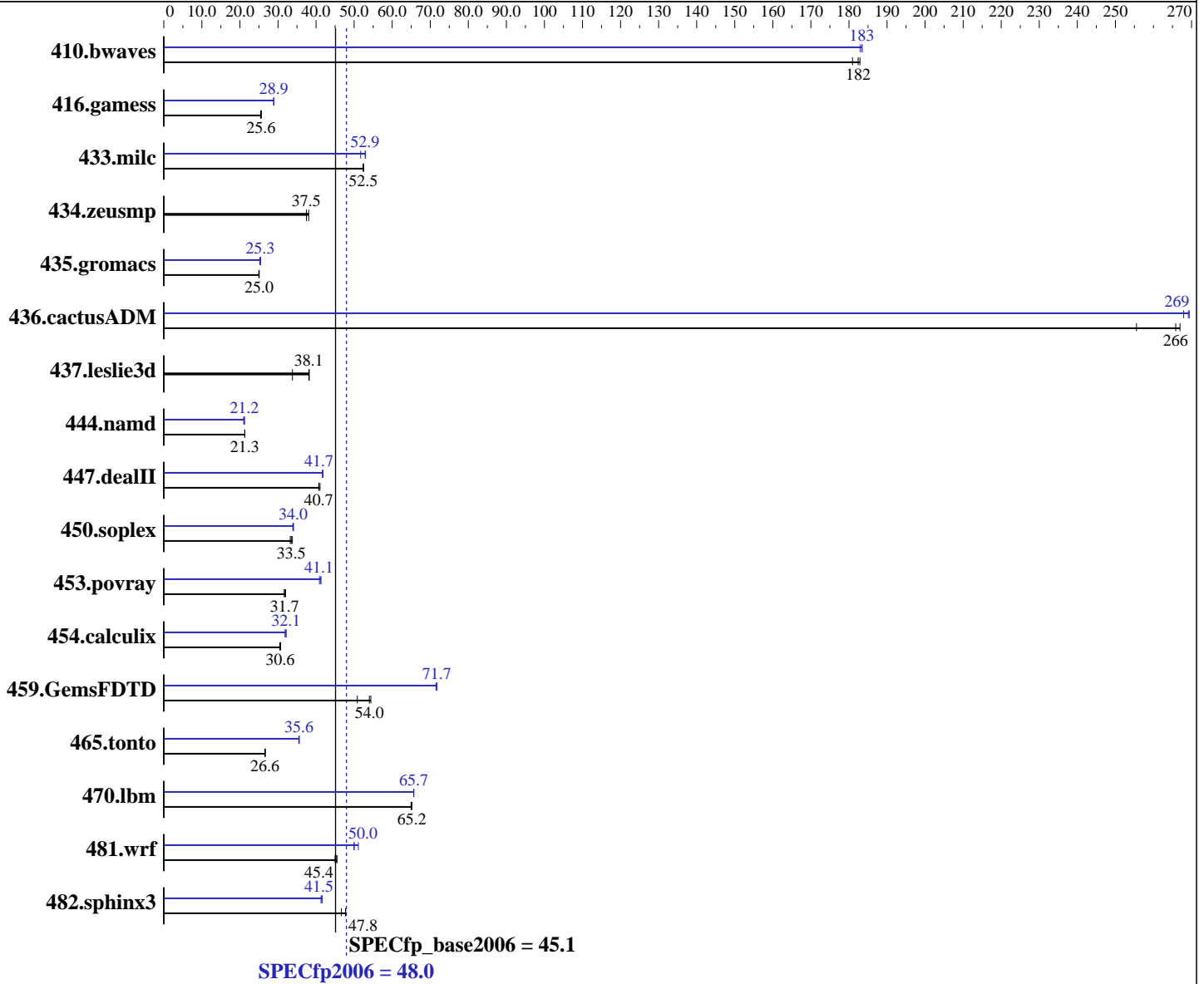
Test sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test date: Jun-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

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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)

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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: HITACHI HDT725050VLA360 1 x 500 GB SATAII, 7200 RPM
 Other Hardware: None

Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|-------------|-------------|------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 75.1 | 181 | 74.5 | 182 | 74.3 | 183 | 74.3 | 183 | 74.1 | 183 | 74.1 | 183 |
| 416.gamess | 769 | 25.4 | 764 | 25.6 | 765 | 25.6 | 677 | 28.9 | 678 | 28.9 | 678 | 28.9 |
| 433.milc | 175 | 52.5 | 175 | 52.5 | 175 | 52.4 | 174 | 52.9 | 173 | 53.0 | 177 | 51.7 |
| 434.zeusmp | 243 | 37.5 | 239 | 38.1 | 243 | 37.5 | 243 | 37.5 | 239 | 38.1 | 243 | 37.5 |
| 435.gromacs | 286 | 25.0 | 285 | 25.0 | 285 | 25.0 | 282 | 25.3 | 281 | 25.4 | 283 | 25.2 |
| 436.cactusADM | 46.8 | 256 | 45.0 | 266 | 44.8 | 267 | 44.6 | 268 | 44.4 | 269 | 44.4 | 269 |
| 437.leslie3d | 278 | 33.8 | 247 | 38.1 | 246 | 38.2 | 278 | 33.8 | 247 | 38.1 | 246 | 38.2 |
| 444.namd | 377 | 21.3 | 377 | 21.3 | 377 | 21.3 | 382 | 21.0 | 379 | 21.2 | 379 | 21.2 |
| 447.dealII | 279 | 41.0 | 281 | 40.7 | 281 | 40.7 | 274 | 41.8 | 274 | 41.7 | 274 | 41.7 |
| 450.soplex | 247 | 33.8 | 249 | 33.5 | 251 | 33.2 | 246 | 33.9 | 245 | 34.0 | 245 | 34.1 |
| 453.povray | 166 | 32.0 | 168 | 31.7 | 168 | 31.7 | 130 | 40.9 | 129 | 41.3 | 129 | 41.1 |
| 454.calculix | 271 | 30.5 | 270 | 30.6 | 269 | 30.7 | 257 | 32.1 | 257 | 32.1 | 259 | 31.8 |
| 459.GemsFDTD | 196 | 54.0 | 195 | 54.4 | 209 | 50.8 | 148 | 71.8 | 148 | 71.7 | 148 | 71.5 |
| 465.tonto | 369 | 26.7 | 370 | 26.6 | 371 | 26.6 | 277 | 35.6 | 277 | 35.6 | 277 | 35.5 |
| 470.lbm | 211 | 65.2 | 211 | 65.2 | 212 | 65.0 | 209 | 65.7 | 209 | 65.7 | 209 | 65.6 |
| 481.wrf | 248 | 45.0 | 246 | 45.5 | 246 | 45.4 | 223 | 50.0 | 223 | 50.0 | 219 | 51.1 |
| 482.sphinx3 | 418 | 46.7 | 408 | 47.8 | 408 | 47.8 | 469 | 41.5 | 468 | 41.6 | 472 | 41.3 |

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)



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General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

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

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Base Optimization Flags (Continued)

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.dealIII: `-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`

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Peak Optimization Flags (Continued)

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

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-revF.20100609.html>



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You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revF.20100609.xml>

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