SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

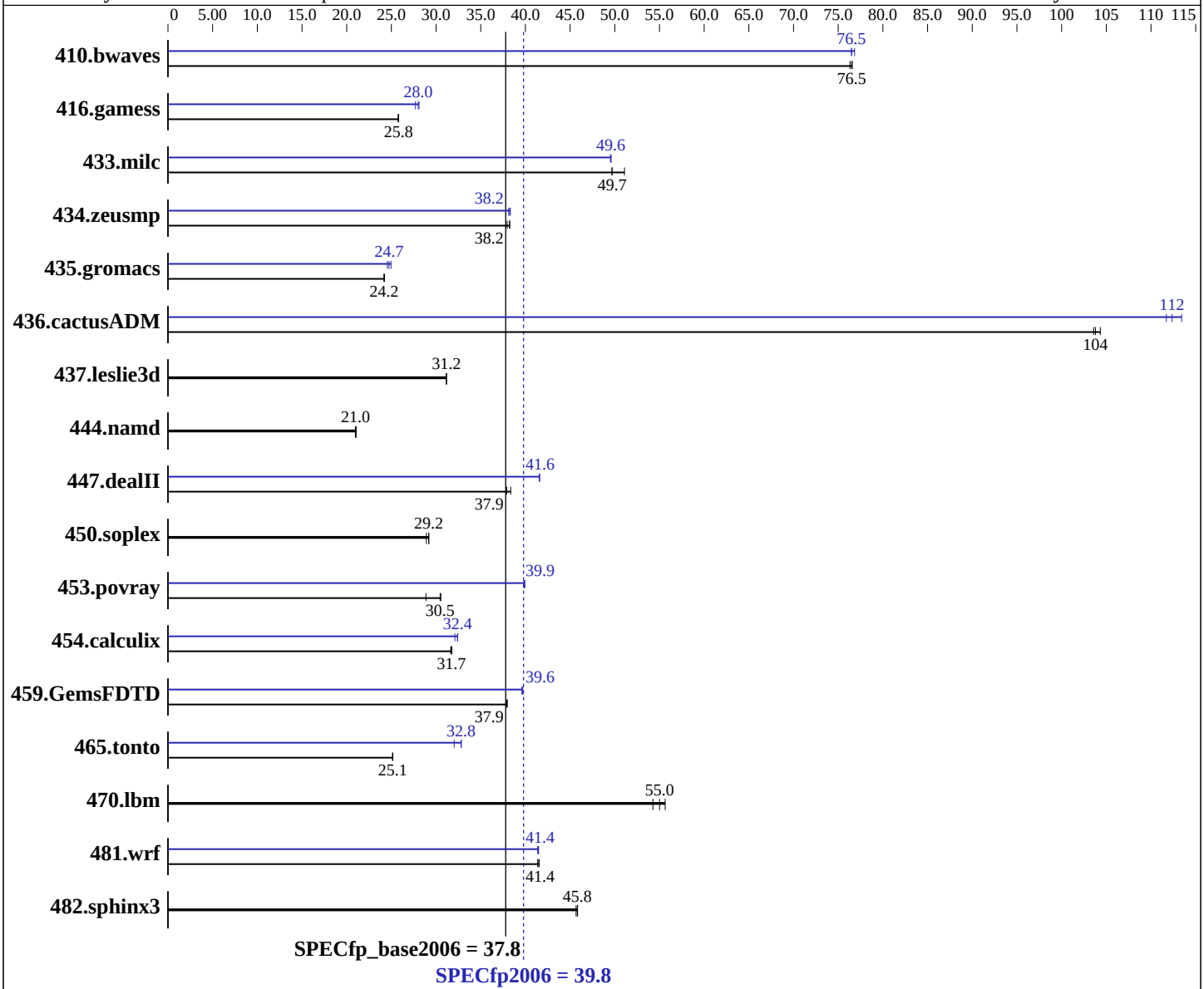
ASUS RS300-E6 (P7F-E) server system
(Intel Xeon
X3470)

SPECfp®2006 = 39.8

SPECfp_base2006 = 37.8

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

Test date: Nov-2009
Hardware Availability: Sep-2009
Software Availability: Jul-2009



Hardware

CPU Name:	Intel Xeon X3470
CPU Characteristics:	Intel Turbo Boost Technology up to 3.6 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
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 20090511 Package ID: l_cproc_p_11.1.040, l_cprof_p_11.1.040
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB PC3-10600R, CL=9)
Disk Subsystem: HITACHI HDT722525DLA380 250 GB, 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	**178**	**76.5**	178	76.3	177	76.6	**178**	**76.5**	177	76.8	178	76.5
416.gamess	759	25.8	**759**	**25.8**	760	25.7	697	28.1	**699**	**28.0**	707	27.7
433.milc	180	51.1	**185**	**49.7**	185	49.7	**185**	**49.6**	185	49.5	185	49.6
434.zeusmp	**238**	**38.2**	240	38.0	238	38.2	238	38.3	239	38.1	**238**	**38.2**
435.gromacs	**295**	**24.2**	295	24.2	295	24.2	291	24.6	286	25.0	**289**	**24.7**
436.cactusADM	115	104	**115**	**104**	115	104	**106**	**112**	107	112	105	113
437.leslie3d	**302**	**31.2**	302	31.2	302	31.2	**302**	**31.2**	302	31.2	302	31.2
444.namd	381	21.1	**382**	**21.0**	382	21.0	381	21.1	**382**	**21.0**	382	21.0
447.dealII	298	38.4	**302**	**37.9**	302	37.9	275	41.6	**275**	**41.6**	275	41.5
450.soplex	**286**	**29.2**	288	28.9	286	29.2	**286**	**29.2**	288	28.9	286	29.2
453.povray	**175**	**30.5**	184	28.9	174	30.5	134	39.8	133	39.9	**133**	**39.9**
454.calculix	260	31.8	261	31.6	**260**	**31.7**	257	32.1	**255**	**32.4**	255	32.4
459.GemsFDTD	280	37.9	**280**	**37.9**	279	38.0	**268**	**39.6**	267	39.7	268	39.6
465.tonto	391	25.2	**391**	**25.1**	391	25.1	300	32.8	**300**	**32.8**	307	32.0
470.lbm	**250**	**55.0**	247	55.6	253	54.3	**250**	**55.0**	247	55.6	253	54.3
481.wrf	**270**	**41.4**	270	41.4	269	41.5	**270**	**41.4**	269	41.5	270	41.4
482.sphinx3	425	45.8	**425**	**45.8**	427	45.7	425	45.8	**425**	**45.8**	427	45.7

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.
```

Operating System Notes

```
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 ATX or SSI spec
390W or higher ATX Power Supply, 350W or highter SSI Server Power Supply
System was configured with ASPEED AST2050 VGA (on board VGA)
```

General Notes

```
The ASUS TS300-E6 (Intel Xeon X3470, 2.93 GHz) and
the ASUS RS300-E6 (Intel Xeon X3470, 2.93 GHz) models are electronically equivalent.
The results have been measured on a ASUS RS300-E6 (Intel Xeon X3470, 2.93 GHz) model.

Submitted_by: <East_Zhao@asus.com>
Submitted: Tue Dec  8 15:40:08 EST 2009
Submission: cpu2006-20091208-09250.sub
```

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 -opt-prefetch
```

Continued on next page

Base Optimization Flags (Continued)

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

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

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

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) `-fno-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

Continued on next page

Peak Optimization Flags (Continued)

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- -opt-prefetch`

450.soplex: `basepeak = yes`

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: `Same as 410.bwaves`

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) `-unroll4 -auto`

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: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel -auto-ilp32`

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

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

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

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