SPEC® CFP2006 Result

Acer Incorporated

Acer AR320 F1 (Intel Xeon X3470)

$SPECfp^®2006 =$ 38.6

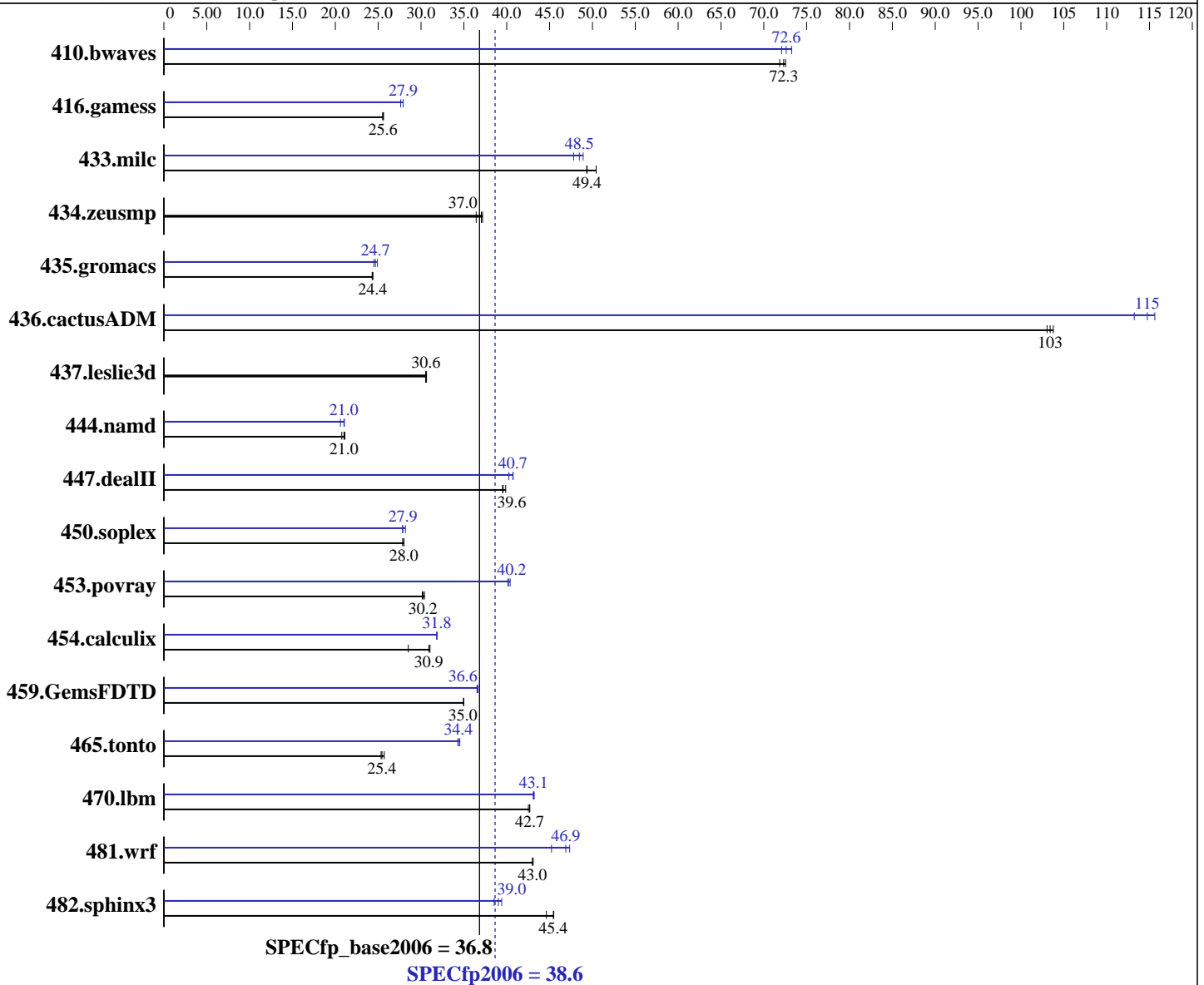$SPECfp\_base2006 =$ 36.8

CPU2006 license: 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

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

Benchmark	base	peak
410.bwaves	72.3	72.6
416.gamess	25.6	27.9
433.milc	49.4	48.5
434.zeusmp	37.0	
435.gromacs	24.4	24.7
436.cactusADM	103	115
437.leslie3d	30.6	
444.namd	21.0	21.0
447.dealII	39.6	40.7
450.soplex	28.0	27.9
453.povray	30.2	40.2
454.calculix	30.9	31.8
459.GemsFDTD	35.0	36.6
465.tonto	25.4	34.4
470.lbm	42.7	43.1
481.wrf	43.0	46.9
482.sphinx3	45.4	39.0

SPECfp_base2006 = 36.8
SPECfp2006 = 38.6

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

Continued on next page

Software

Operating System:	SUSE Linux Enterprise Sserver 11 (x86_64) Kernel 2.6.27.19-5
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:	Multi-user, level 3

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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (4 x 4096 MB ECC Unbuffered DDR3-1333)
Disk Subsystem:	1 x 1000 GB 7200RPM SATA HDD
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 Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	189	71.8	**188**	**72.3**	187	72.5	186	73.3	189	72.1	**187**	**72.6**
416.gamess	764	25.6	**766**	**25.6**	767	25.5	702	27.9	709	27.6	**702**	**27.9**
433.milc	182	50.4	**186**	**49.4**	186	49.3	**189**	**48.5**	188	48.9	192	47.8
434.zeusmp	245	37.2	**246**	**37.0**	250	36.4	245	37.2	**246**	**37.0**	250	36.4
435.gromacs	294	24.3	**293**	**24.4**	293	24.4	291	24.5	**289**	**24.7**	287	24.9
436.cactusADM	115	104	**116**	**103**	116	103	**104**	**115**	106	113	103	116
437.leslie3d	308	30.5	**307**	**30.6**	307	30.6	308	30.5	**307**	**30.6**	307	30.6
444.namd	380	21.1	386	20.8	**382**	**21.0**	381	21.1	**382**	**21.0**	389	20.6
447.dealII	287	39.9	**289**	**39.6**	290	39.5	284	40.3	281	40.8	**281**	**40.7**
450.soplex	298	28.0	299	27.8	**298**	**28.0**	296	28.2	**299**	**27.9**	300	27.8
453.povray	175	30.4	**176**	**30.2**	176	30.1	133	40.1	132	40.4	**132**	**40.2**
454.calculix	**267**	**30.9**	266	31.0	289	28.5	**259**	**31.8**	259	31.9	259	31.8
459.GemsFDTD	**303**	**35.0**	303	35.0	303	35.0	**290**	**36.6**	290	36.6	290	36.5
465.tonto	**387**	**25.4**	383	25.7	388	25.3	287	34.3	285	34.5	**286**	**34.4**
470.lbm	322	42.7	**322**	**42.7**	323	42.5	**318**	**43.1**	318	43.2	319	43.1
481.wrf	260	43.0	259	43.1	**260**	**43.0**	247	45.2	**238**	**46.9**	236	47.3
482.sphinx3	**429**	**45.4**	428	45.5	437	44.6	495	39.4	**499**	**39.0**	506	38.5

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

Operating System Notes

```
'ulimit -s unlimited' was set for stacksize unlimited
```

General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
This result was measured on the Gateway GT310 F1.
These 4 systems are electronically equivalent:
Acer AR320 F1, Acer AT310 F1, Gateway GR320 F1, and Gateway GT310 F1.
```

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$SPECfp2006 =$ 38.6

$SPECfp\_base2006 =$ 36.8

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
```

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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
```

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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`

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

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