SPEC® CFP2006 Result
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Acer Incorporated

Acer Altos R920 (Intel Xeon X7460)

SPECfp®_rate2006 = 77.8

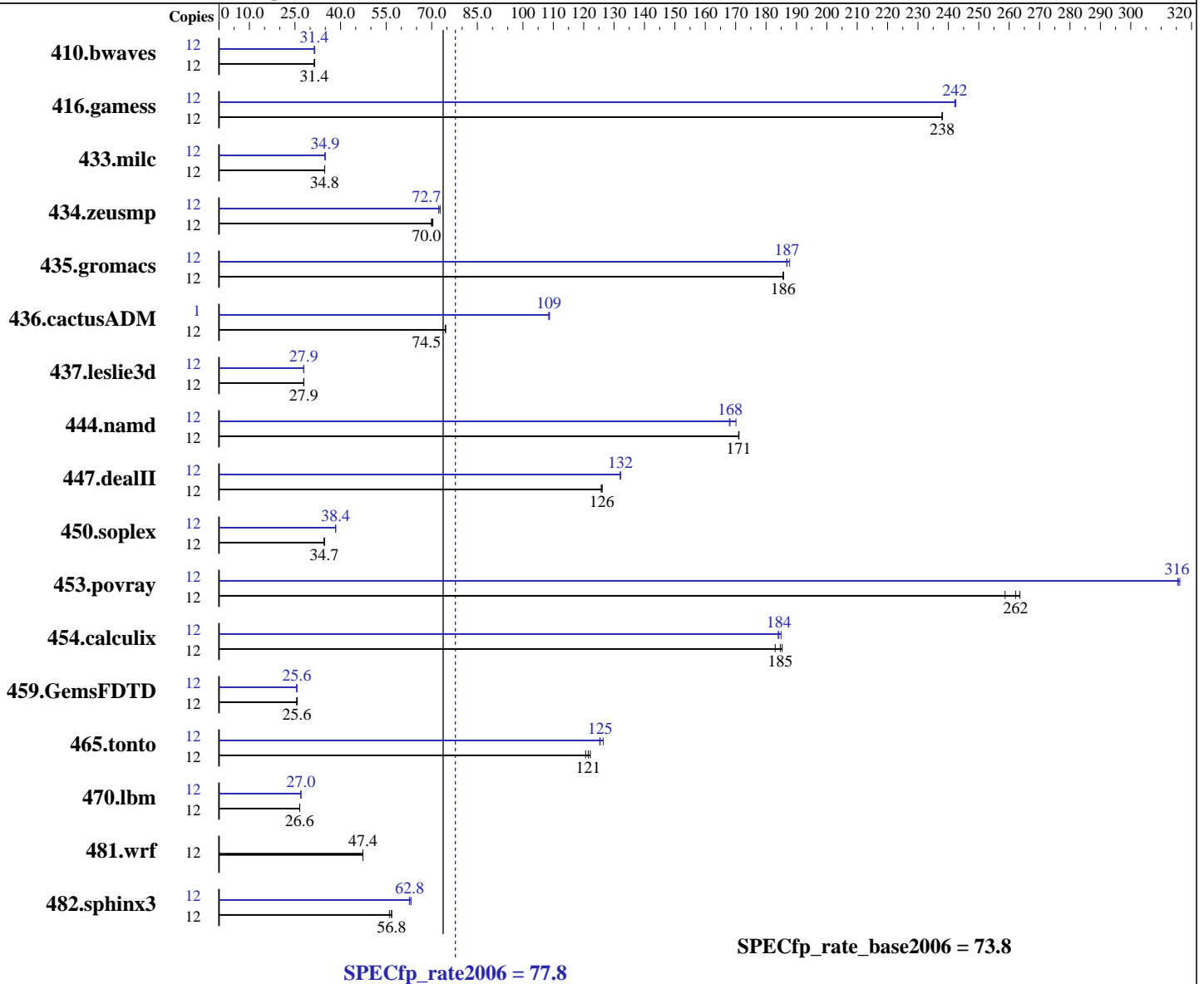SPECfp_rate_base2006 = 73.8

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

Test date: Sep-2008
Hardware Availability: Sep-2008
Software Availability: Nov-2008

Copies

Benchmark	Copies	Value
410.bwaves	12	31.4
410.bwaves	12	31.4
416.gamess	12	242
416.gamess	12	238
433.milc	12	34.9
433.milc	12	34.8
434.zeusmp	12	72.7
434.zeusmp	12	70.0
435.gromacs	12	187
435.gromacs	12	186
436.cactusADM	1	109
436.cactusADM	12	74.5
437.leslie3d	12	27.9
437.leslie3d	12	27.9
444.namd	12	168
444.namd	12	171
447.dealII	12	132
447.dealII	12	126
450.soplex	12	38.4
450.soplex	12	34.7
453.povray	12	316
453.povray	12	262
454.calculix	12	184
454.calculix	12	185
459.GemsFDTD	12	25.6
459.GemsFDTD	12	25.6
465.tonto	12	125
465.tonto	12	121
470.lbm	12	27.0
470.lbm	12	26.6
481.wrf	12	47.4
482.sphinx3	12	62.8
482.sphinx3	12	56.8

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Hardware

CPU Name: Intel Xeon X7460
CPU Characteristics: 1066MHz system bus
CPU MHz: 2667
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
CPU(s) orderable: 1, 2, 4 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 9 MB I+D on chip per chip, 3 MB shared / 2 cores

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042, l_fproc_b_11.0.042
Auto Parallel: Yes
File System: ReiserFS
System State: Multi-user, level 3
Base Pointers: 64-bit

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L3 Cache:	16 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB (16 x 2048MB ECC FB-DIMM DDR2-667 CL5)
Disk Subsystem:	1 x 73GB 10000PRM SAS HDD
Other Hardware:	None

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

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	12	5195	31.4	**5194**	**31.4**	5194	31.4	12	5194	31.4	**5194**	**31.4**	5194	31.4
416.gamess	12	**987**	**238**	988	238	987	238	12	**970**	**242**	969	242	970	242
433.milc	12	3166	34.8	3168	34.8	**3168**	**34.8**	12	**3155**	**34.9**	3155	34.9	3155	34.9
434.zeusmp	12	**1559**	**70.0**	1562	69.9	1551	70.4	12	1500	72.8	1511	72.3	**1502**	**72.7**
435.gromacs	12	461	186	**462**	**186**	462	186	12	459	187	**458**	**187**	456	188
436.cactusADM	12	1923	74.6	1926	74.5	**1924**	**74.5**	1	110	109	**110**	**109**	110	109
437.leslie3d	12	4038	27.9	4045	27.9	**4041**	**27.9**	12	**4042**	**27.9**	4043	27.9	4042	27.9
444.namd	12	562	171	**563**	**171**	563	171	12	**572**	**168**	566	170	573	168
447.dealII	12	**1090**	**126**	1089	126	1092	126	12	1040	132	**1039**	**132**	1039	132
450.soplex	12	**2888**	**34.7**	2891	34.6	2888	34.7	12	**2607**	**38.4**	2607	38.4	2608	38.4
453.povray	12	242	264	**244**	**262**	247	259	12	**202**	**316**	202	316	202	315
454.calculix	12	**536**	**185**	541	183	534	185	12	535	185	538	184	**537**	**184**
459.GemsFDTD	12	**4964**	**25.6**	4965	25.6	4964	25.6	12	**4973**	**25.6**	4973	25.6	4975	25.6
465.tonto	12	**972**	**121**	979	121	966	122	12	934	126	**941**	**125**	943	125
470.lbm	12	6208	26.6	**6207**	**26.6**	6207	26.6	12	6129	26.9	**6116**	**27.0**	6116	27.0
481.wrf	12	2831	47.4	**2830**	**47.4**	2830	47.4	12	2831	47.4	**2830**	**47.4**	2830	47.4
482.sphinx3	12	4172	56.1	**4118**	**56.8**	4117	56.8	12	**3726**	**62.8**	3734	62.6	3701	63.2

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.

General Notes

    All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex,
    470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
    taskset was used to bind processes to cores except
    for 436.cactusADM peak
    OMP_NUM_THREADS set to number of processors
    KMP_AFFINITY set to "physical,0"
    KMP_STACKSIZE set to 64M
    BIOS Settings
      Hardware Prefetch set to OFF
      Optimization for high-frequency FSB applications set to OFF

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General Notes (Continued)

```
'ulimit -s unlimited' was set for stacksize unlimited
OMP_NUM_THREADS set to number of cores
For peak modules using 1/2 the number of available cores, copies
were each assigned to a single L2 cache using mysubmit.pl script.
See the flags description file for mysubmit.pl details.
```

Base Compiler Invocation

C benchmarks:
```
icc
```

C++ benchmarks:
```
icpc
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icc ifort
```

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:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

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Base Optimization Flags (Continued)

C++ benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Fortran benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/opt/intel/Compiler/11.0/042/bin/ia32/icc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

    433.milc: `icc`

C++ benchmarks (except as noted below):
```
icpc
```

    450.soplex: `/opt/intel/Compiler/11.0/042/bin/ia32/icpc`
```
            -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

Fortran benchmarks (except as noted below):
```
ifort
```

    437.leslie3d: `/opt/intel/Compiler/11.0/042/bin/ia32/ifort`
```
            -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

Benchmarks using both Fortran and C:
```
icc ifort
```

Peak 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
      444.namd: -DSPEC_CPU_LP64
     447.dealII: -DSPEC_CPU_LP64
```

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Peak Portability Flags (Continued)

```
     453.povray: -DSPEC_CPU_LP64
    454.calculix: -DSPEC_CPU_LP64 -nofor_main
   459.GemsFDTD: -DSPEC_CPU_LP64
      465.tonto: -DSPEC_CPU_LP64
        481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

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

      470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -unroll2 -scalar-rep- -opt-prefetch
               -opt-malloc-options=3

   482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
```

C++ benchmarks:

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

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

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

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

Fortran benchmarks:

```
    410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

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

   434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static

   437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -opt-malloc-options=3 -opt-prefetch
```

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Peak Optimization Flags (Continued)

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

465.tonto: `-prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4 -auto`

Benchmarks using both Fortran and C:

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

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

454.calculix: `-xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32`

481.wrf: `basepeak = yes`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.12.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.12.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 Tue Jul 22 22:06:49 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 22 October 2008.