SPEC® CFP2006 Result
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Acer Incorporated

$SPECfp^®\_rate2006 =$ 154

Acer Altos R920 (Intel Xeon X7460)

$SPECfp\_rate\_base2006 =$ 141

CPU2006 license: 97　　　　　　　　　　　　　　　　**Test date:** Sep-2008
Test sponsor: Acer Incorporated　　　　　　　　　**Hardware Availability:** Sep-2008
Tested by: Acer Incorporated　　　　　　　　　　**Software Availability:** Nov-2008

SPECfp_rate_base2006 = 141

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Hardware	
CPU Name:	Intel Xeon X7460
CPU Characteristics:	1066MHz system bus
CPU MHz:	2667
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 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

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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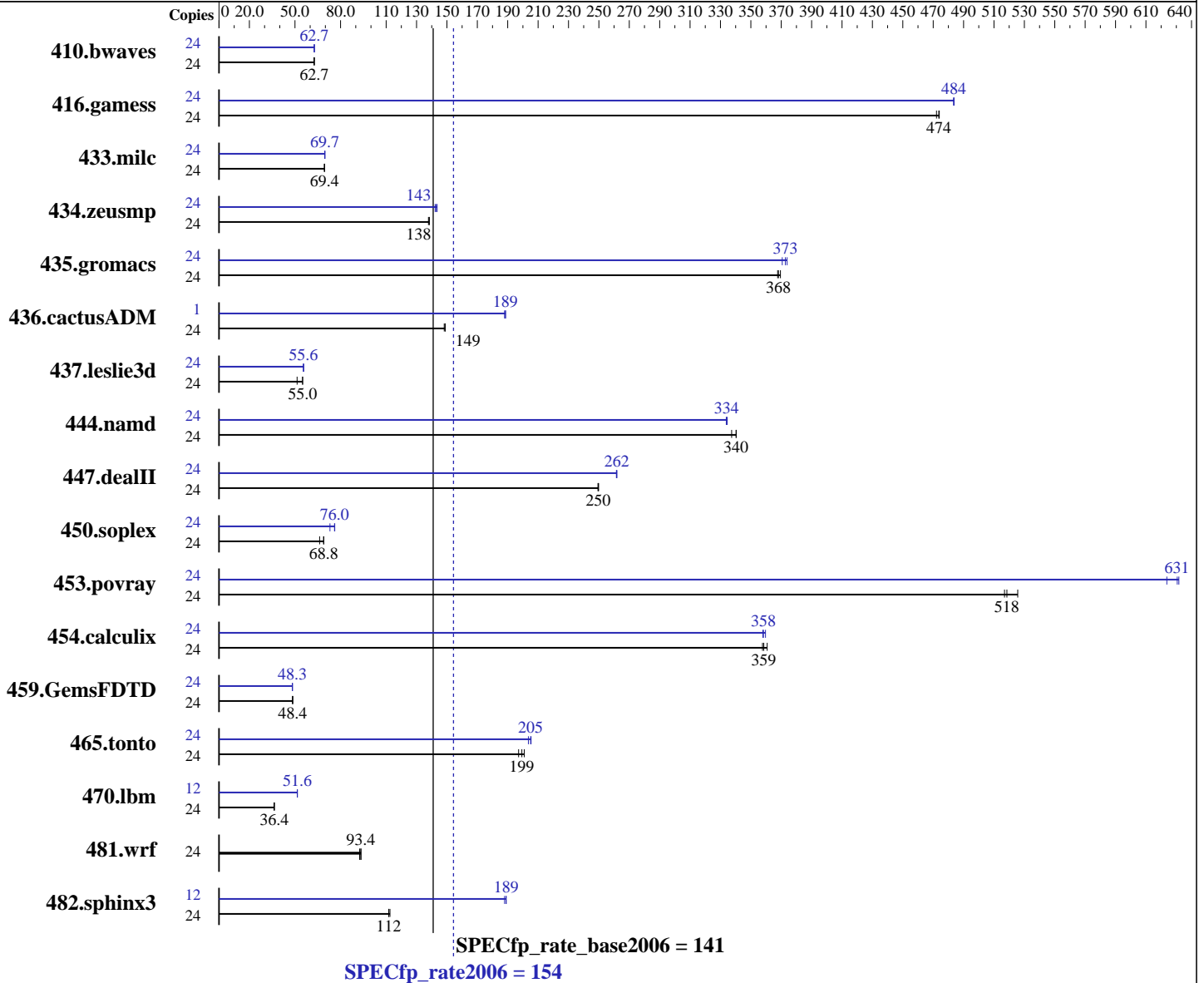SPECfp_rate_base2006 = 141

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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	24	5215	62.5	**5202**	**62.7**	5201	62.7	24	5200	62.7	5201	62.7	**5200**	**62.7**
416.gamess	24	995	472	991	474	**992**	**474**	24	972	483	**972**	**484**	971	484
433.milc	24	3175	69.4	3173	69.4	**3174**	**69.4**	24	3163	69.7	**3163**	**69.7**	3163	69.6
434.zeusmp	24	1584	138	1578	138	**1579**	**138**	24	**1527**	**143**	1535	142	1521	144
435.gromacs	24	**465**	**368**	466	368	464	369	24	**460**	**373**	458	374	462	371
436.cactusADM	24	1935	148	1927	149	**1927**	**149**	1	63.6	188	63.4	189	**63.4**	**189**
437.leslie3d	24	4389	51.4	**4102**	**55.0**	4099	55.0	24	**4056**	**55.6**	4056	55.6	4058	55.6
444.namd	24	565	340	**566**	**340**	571	337	24	**576**	**334**	577	334	575	334
447.dealII	24	1099	250	**1100**	**250**	1101	249	24	1049	262	1050	262	**1049**	**262**
450.soplex	24	3023	66.2	**2907**	**68.8**	2904	68.9	24	2741	73.0	**2633**	**76.0**	2627	76.2
453.povray	24	247	517	243	526	**246**	**518**	24	205	624	202	632	**202**	**631**
454.calculix	24	549	361	**552**	**359**	554	358	24	551	360	553	358	**553**	**358**
459.GemsFDTD	24	**5256**	**48.4**	5251	48.5	5257	48.4	24	5270	48.3	5275	48.3	**5272**	**48.3**
465.tonto	24	1198	197	1176	201	**1185**	**199**	24	1150	205	**1152**	**205**	1160	204
470.lbm	24	9081	36.3	9064	36.4	**9069**	**36.4**	12	**3198**	**51.6**	3197	51.6	3202	51.5
481.wrf	24	2897	92.5	**2871**	**93.4**	2870	93.4	24	2897	92.5	**2871**	**93.4**	2870	93.4
482.sphinx3	24	4187	112	4157	113	**4186**	**112**	12	**1238**	**189**	1245	188	1238	189

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

Continued on next page

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Test date: Sep-2008

Hardware Availability: Sep-2008

Software Availability: Nov-2008

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.

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