



# SPEC<sup>®</sup> CFP2006 Result

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## Acer Incorporated

SPECfp<sup>®</sup>\_rate2006 = 57.5

## Acer Altos R920 (Intel Xeon E7330)

SPECfp\_rate\_base2006 = 53.4

CPU2006 license: 97

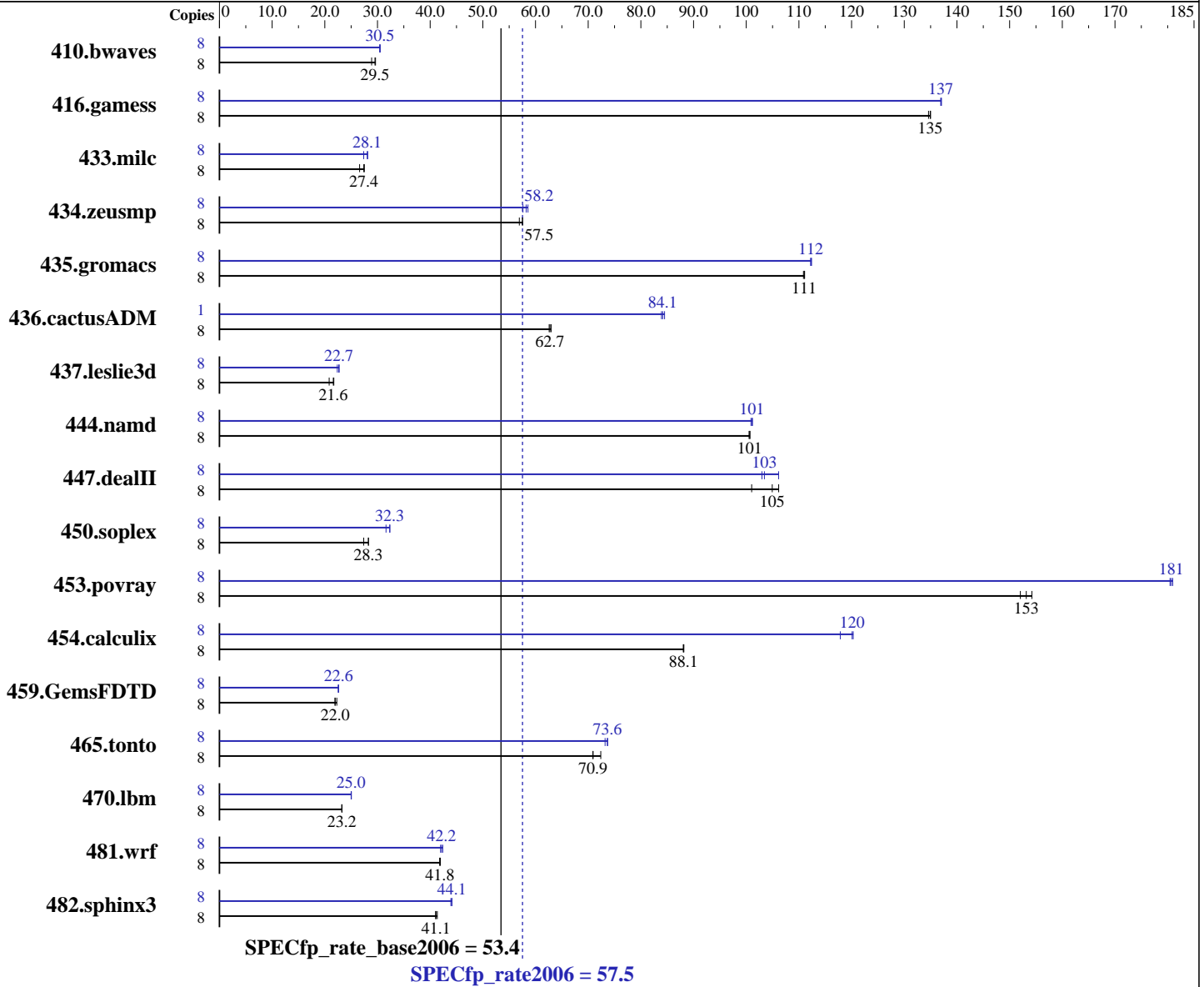
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Nov-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E7330  
 CPU Characteristics: 1066MHz system bus  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1, 2, 4 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip, 3 MB shared / 2 cores

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### Software

Operating System: Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, level 3  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (16 x 1048MB ECC FB-DIMM DDR2-667 CL5-5-5)  
Disk Subsystem: 1 x 73GB 10000PRM SAS HDD  
Other Hardware: None

Other Software: Binutils 2.17.50.0.15

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	3763	28.9	<b>3683</b>	<b>29.5</b>	3670	29.6	8	3573	30.4	3565	30.5	<b>3567</b>	<b>30.5</b>		
416.gamess	8	<b>1161</b>	<b>135</b>	1164	135	1160	135	8	1144	137	1143	137	<b>1144</b>	<b>137</b>		
433.milc	8	2760	26.6	2670	27.5	<b>2680</b>	<b>27.4</b>	8	2682	27.4	2609	28.1	<b>2618</b>	<b>28.1</b>		
434.zeusmp	8	1279	56.9	1265	57.5	<b>1266</b>	<b>57.5</b>	8	1264	57.6	1243	58.6	<b>1250</b>	<b>58.2</b>		
435.gromacs	8	515	111	<b>515</b>	<b>111</b>	514	111	8	508	112	<b>509</b>	<b>112</b>	509	112		
436.cactusADM	8	1527	62.6	1518	63.0	<b>1524</b>	<b>62.7</b>	1	<b>142</b>	<b>84.1</b>	142	83.9	141	84.5		
437.leslie3d	8	3610	20.8	3463	21.7	<b>3480</b>	<b>21.6</b>	8	3361	22.4	<b>3318</b>	<b>22.7</b>	3309	22.7		
444.namd	8	<b>637</b>	<b>101</b>	638	101	637	101	8	634	101	636	101	<b>635</b>	<b>101</b>		
447.dealII	8	<b>872</b>	<b>105</b>	906	101	862	106	8	889	103	<b>885</b>	<b>103</b>	862	106		
450.soplex	8	2436	27.4	2359	28.3	<b>2360</b>	<b>28.3</b>	8	2110	31.6	2063	32.3	<b>2063</b>	<b>32.3</b>		
453.povray	8	<b>278</b>	<b>153</b>	276	154	280	152	8	<b>236</b>	<b>181</b>	236	180	235	181		
454.calculix	8	<b>749</b>	<b>88.1</b>	749	88.1	749	88.2	8	<b>550</b>	<b>120</b>	560	118	549	120		
459.GemsFDTD	8	3810	22.3	<b>3865</b>	<b>22.0</b>	3869	21.9	8	3762	22.6	3754	22.6	<b>3757</b>	<b>22.6</b>		
465.tonto	8	1087	72.4	<b>1110</b>	<b>70.9</b>	1110	70.9	8	<b>1069</b>	<b>73.6</b>	1068	73.7	1075	73.2		
470.lbm	8	4723	23.3	4732	23.2	<b>4731</b>	<b>23.2</b>	8	<b>4396</b>	<b>25.0</b>	4397	25.0	4388	25.0		
481.wrf	8	<b>2136</b>	<b>41.8</b>	2137	41.8	2130	41.9	8	2129	42.0	<b>2120</b>	<b>42.2</b>	2108	42.4		
482.sphinx3	8	3770	41.4	<b>3793</b>	<b>41.1</b>	3800	41.0	8	3549	43.9	3532	44.1	<b>3536</b>	<b>44.1</b>		

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

## General Notes

### BIOS Settings

Hardware Prefetcher set to OFF

Adjacent Cache Line Prefetch set to OFF

All results but peak 436.cactusADM used taskset to bind processes to cores.

"ulimit -s unlimited" was set for stacksize unlimited

OMP\_NUM\_THREADS set to number of cores



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## 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:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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**Software Availability:** Nov-2007

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/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.deallI: -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
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) -fast -fno-alias
-auto-ilp32
```

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## Peak Optimization Flags (Continued)

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast  
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4  
-ansi-alias

### Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32



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The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.00.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.00.xml>

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